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Ecological and Moral Concerns in Monica Hughes's Science Fiction: The Journeys of Maturity

by

Ruth A. Dyck Fehderau ©

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements for the degree of Master of Arts.

Department of English

Edmonton, Alberta

Fall 1995

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"Speak to the earth, and it will teach you."

Job 12:8a NIV

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled Ecological and Moral Concerns in Monica Hughes's Science Fiction: The Journeys of Maturity submitted by Ruth A. Dyck Fehderau in partial fulfillment of the requirements for the degree of Master of Arts.

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Dr. Anna E. Altmann

Dr. Jon C. Stott

28 Sept. 95

Abstract

Before environmental awareness and protection became popular concerns, Monica Hughes was expressing her concern for Earth's ecosystems. Ecological themes appear, to some extent, in each of her novels, but they are particularly prominent in her science fiction novels. An analysis of these themes in seven of the novels, using the characters' geographical and symbolic journeys as organizing devices, reveals that the crux of Hughes's ecological perspective is her ideal relationship between humans and nature. The analysis also shows that Hughes uses traditional literary structures, such as patterns of dystopias and linear and circular journeys, but she does not always use these structures in traditional ways.

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Introduction

Monica Hughes is one of Canada's most prolific writers of children's literature. She has an international reputation; she publishes her works in England and the United States, and her novels are translated and published in other languages as well. The high calibre of her writing has won her numerous awards. Gerald Rubio, in "Monica Hughes: An Overview," states that "Professionals--librarians, teachers, booksellers--familiar with even a few of Monica Hughes'. . . works, recognize her as one of the best Canadian--and perhaps world--authors of juvenile fiction at work today" (20). Considering her award-winning, international reputation and enormous body of work, however, Hughes is an unjustly neglected author who has received little critical attention.

Monica Hughes was born Monica Ince on November 3, 1925, in Liverpool, England. When she was still young, her family moved to Egypt, where her father was the Chair of Mathematics at the University of Cairo. They returned to London, England, when she was seven years old, and later moved to Edinburgh, Scotland. Although Hughes was privately educated in both London and Edinburgh, she found her London education--which included frequent trips to museums and art galleries--to be far more stimulating than her later Edinburgh education, which centred upon book learning. Indeed, she credits that early education for developing in her a sense of wonder and an appreciation for the power of words.

As an adult, Hughes worked as a dress designer, lab technician, and bank clerk, and served in the Women's Royal Naval Service as well. Her wanderlust led her from England to Zimbabwe, and finally to Canada. In 1957 she married a Canadian, Glenn Hughes, and became a Canadian citizen.

After raising four children, Hughes began writing adult fiction but soon turned to juvenile fiction. Her first work, Gold Fever Trail: A Klondike Adventure, was published in 1974. Since then, Hughes has become an extremely prolific writer. To date, she has written two picture books, two historical novels, two fantasies, six realistic problem novels, and fifteen science fiction novels.[1] In addition, she has published a number of essays, seminar papers, and articles.[2]

As can be expected, such a large volume of work has generated countless book reviews in a variety of journals. Hughes herself has been interviewed several times for newspaper and magazine columns. In addition, Raymond E. Jones published a literary interview with Hughes, "The Technological Pastoralist: A Conversation with Monica Hughes" (Canadian Children's Literature 44: 6-18), an interview to which I frequently refer in my thesis. A number of important overviews of Hughes's work at various stages of her career are available in Something About the Author, Children's Literature Review, and Stott and Jones's book, Canadian Books for Children: A Guide to Authors and Illustrators (1988). Gerald Rubio also published an important overview in Canadian Children's Literature 17.

It is rather curious to note, however, that despite the many reviews of Hughes's novels, her work has received very little critical attention. This is particularly surprising given the fact that Hughes has won more than a dozen literary awards--including the prestigious Vicky Metcalf Award and the Canada Council Prize for Children's Literature (twice). Indeed, to my knowledge, exactly four critical articles have been written about all of Hughes's work. In 1985, in Canadian Children's Literature 37, Adrienne E. Kertzer published "Setting, Self, and the Feminine Other in Monica Hughes's Adolescent Fiction." Kertzer explores the relationship between self and the feminine other in five of Hughes's novels. She suggests that Hughes establishes herself as a feminist who argues that maturity lies in assimilating the feminine other and rejecting binary opposites such as self and other. At the same time, Kertzer points out a paradoxical tension: she suggests that Hughes's narrative techniques indicate that the assimilation of self and other is impossible.

In 1993, two more articles were published about Hughes's work, both in a volume edited by C.W. Sullivan III, Science Fiction for Young Readers. J.R. Wytenbroek's article, "The Debate Continues: Technology or Nature--A Study of Monica Hughes's Science Fiction Novels," briefly introduces three general themes that frequently appear in Hughes's novels: the theme of personal cost, the theme of the importance of the environment, and the theme of the value of wisely used technology. Although Wytenbroek correctly points out the existence of the three themes in eleven of Hughes's novels, the scope of her article is simply too broad, and the organization too scattered; she is unable to develop or to discuss adequately even one of the themes or one of the novels in her nine-page paper. Wytenbroek's article points out, however, fertile ground for further research. I will explore and develop more fully in this thesis two of the themes that she presents in her article, the value of wisely used technology and the importance of the environment.

In the same volume, Raymond E. Jones published "'True Myth': Female Archetypes in Monica Hughes's The Keeper of the Isis Light." Jones discusses a single novel in light of a single overriding theme, the myth of the heroine. He traces the development of the protagonist through three phases of female identity--maiden, mother, and crone--and shows how that development is dependent on her growing knowledge of self and others, and is intricately connected with the natural environment of Isis, the planet on which the protagonist lives.

Finally, in a 1994 issue of Children's Literature Association Quarterly, Gwyneth Evans published "The Girl in the Garden: Variations on a Feminist Pastoral." Evans shows how two novels, Rumer Godden's An Episode of Sparrows (1955) and Monica Hughes's The Refuge (1989), both closely rework Mary Hodgson Burnett's classic, The Secret Garden (1911), but in very different social contexts. Evans suggests that Hughes's novel ironically inverts some of Burnett's images and themes, but that it, like Burnett's novel, simultaneously insists on the value and importance of nature, both for the central character, an adolescent girl, and for the society in which she lives.

If Hughes's writing is indeed of the calibre of world-class children's works, as Gerald Rubio suggests it is, then, clearly, the critical literature treating it is insufficient. One of my reasons for writing this thesis is to contribute criticism to this subject which desperately needs, and deserves, further analysis. I also hope that this project, in some small way, contributes positively to Hughes's exposure in Canada. Monica Hughes has repeatedly expressed concern that her work is particularly bereft of attention in Canadian circles. (Even after she had established herself as a competent writer, she had difficulty finding a publisher on this side of the ocean.) This shortcoming appears even more pronounced in light of Hughes's blatantly Canadian content. Not only does she constantly deal with "survival" and the related themes Margaret Atwood posited in her landmark Survival: A Thematic Guide to Canadian Literature (1972), but Hughes consciously tries in her writing to "come to terms with this difficult land" ("Somewhere" 22), and to incorporate "a true Canadian mythology" (23). Moreover, even in her futuristic science fiction novels, Hughes frequently uses Canadian settings. Hughes's efforts to contribute to the Canadian canon deserve both acknowledgement and exploration because they are unique, because they are good, and because they are so very Canadian.

The final and most prominent reason for this project is to illuminate Monica Hughes's unique ecological perspective. The literature about Hughes's work frequently mentions her concern for nature. As I mentioned earlier, Wytenbroek briefly describes the importance of the environment in Hughes's novels. Kertzer, Jones, and Evans also speak of the prominent role nature plays in Hughes's novels. Hughes herself mentions this in several interviews. In a conversation with Joan Malcolmson, Hughes states that "I'm concerned that children think about the future of our planet" (33), and in an interview with Frieda Wishinsky, Hughes says,

> "The environment . . . is an abiding passion. I was interested in it before we all knew there was such a great problem. Maybe that's because I've had moments of epiphany in the bush, in central Canada, and in the mountains. The idea that we're mucking up the whole thing is terribly sad and makes me angry. Environmental themes . . . sneak into my work all the time." (21)

Although Hughes's ecological themes appear in all of her work, I focus on only her science fiction novels. I do so partly because I must narrow the field of discussion; since Hughes is such a prolific writer, I cannot do justice to any of her work if I attempt to discuss all of it. More specifically, I focus on her science fiction, first, because I believe it is the genre in which she is most worthy of critical attention. Most of Hughes's novels are competent, and several are superior, but her science fiction, her largest body of work, is that which is most consistently good. Hughes is at her best when she is not constrained by the precise facts necessary for realistic fiction. She states in a 1986 interview that "the externals can be real nuisance because of the facts. . . . I keep falling over the facts, little things, [in realistic fiction] far more than in my science fiction. It can be a real nuisance" (Jones, "Technological Pastoralist" 7). Secondly, I focus on her science fiction novels because the important themes and patterns I wish to explore are most prominent and highly developed in these novels.

My third reason for focussing on Hughes's science fiction is the intriguing nature and implications of the genre itself. Hughes uses the genre as a tool to intensify the moral aspect of her ecological themes. Patrick Parrinder, in Science Fiction: Its Criticism and Teaching (1980), states that the genre of science ficition is "essentially oriented towards social criticism" (40). Philip K. Dick, in "Who is a SF Writer?," continues along this vein and suggests that the SF writer predicts possible futures on the basis of existing or plausible data in an effort to encourage change in the present. Monica Hughes uses exactly this technique: in her science fiction she creates scenarios of the future--usually negative futures--that she sees as probable, and perhaps inevitable, results of today's social practices, thereby commenting on current social practices. Not only does she use these scenarios to endorse specific issues--such as animal rights--but she also uses them to criticize society's foundations as an organism and society's relationship to another organism, nature. This method allows Hughes to send a message to her readers indirectly; when she is successful, she creates an artistic, sparkling work that conveys a subtle message. On the other hand, when she overuses the practice, she becomes too heavy-handed in an effort to "get the message across." Consequently, the moralism becomes overt rather than subtle: the agent of socialization inhibits the artist. In a few of Hughes's science fiction novels, she is too concerned with didactic moralizing, with making her readers clearly understand the urgency of her message. What could be a fine piece of literature becomes, instead, mere propaganda.

Hughes's most intriguing and most sophisticated work thus far is her 1980 science fiction novel, The Keeper of the Isis Light. Each of the themes I explore in this thesis appears to some extent in The Keeper of the Isis Light. But apart from numerous references to the novel--mostly in the notes--I do not discuss it extensively. Adrienne E. Kertzer and J.R. Wytenbroek each give it some attention in their critical articles. But the novel is most extensively and significantly discussed in Raymond E. Jones's "'True Myth': Female Archetypes in Monica Hughes's The Keeper of the Isis Light." Jones discusses the protagonist's journey to maturity, her development of self-knowledge and knowledge of the people and universe around her, as well as her intense and intimate communion with nature, all topics I explore in this thesis. Rather than risk unnecessary repetition of key ideas, I focus on novels that develop Hughes's points strongly and even more clearly than The Keeper of the Isis Light, but that have not received the attention they deserve.

Monica Hughes's ecological perspective, as seen in her science fiction novels, revolves around an ideal relationship between humanity and nature. This ideal is more than a simple harmony. It is a relationship that has two primary characteristics. The first is holism: together, the two parties create a whole that is greater than the sum of the two parts. In this relationship, nature is essentially defined as the outdoors; it is an organism that includes all elements of the planet, except cataclysmic events, humans, and human artifacts. The holistic relationship with nature is unique to humans; since plants and animals are a part of the organism of nature, they obviously cannot have any relationship with it, much less a holistic one. Humans, then, have a privileged place in the universe.[3] Yi-Fu Tuan, in Man and Nature (1971), notes that "'And' is a conjunction, but in 'man and nature' the conjunction only serves to remind us that a cut has been made. What the expression 'man and nature' suggests is that man stands outside of nature" (3). Hughes's holistic relationship between humans and nature depends on this distinction between the two parties. When a society identifies with nature so closely that the society becomes like an animal population and is a part of the organism of nature (as is the Eko society in Ring-Rise, Ring-Set), the delicate balance necessary for a holistic relationship breaks; although the society lives in harmony with nature, it does not necessarily achieve the ideal of a holistic relationship. On the other hand, if a society neglects or abuses nature (as does the ArcOne society in Devil on My Back), the balance is also destroyed. In neglecting the holistic relationship with nature, then, these societies come under Hughes's social criticism.

The second essential characteristic of Hughes's ideal relationship between humanity and nature is that it is an active, participatory relationship. Nature is not separated or protected from humans; although humans are not part of the organism of nature, they do participate in its community of life. Ideally, humans use natural resources as they need them, being careful not to waste or abuse them. In addition, Hughes shows that the opposite, the abuse of nature and its resources, is neither utilitarian nor moral.

When a society in Hughes's novels successfully achieves this ideal relationship with nature, it also becomes a utopia; that is, it achieves an idealized state of perfection. The only such human society in Hughes's novels is the one on a distant planet in Invitation to the Game (1990). (The society of ex-slaves in Devil on My Back comes close to creating a utopia, but its dependence on ArcOne, a dystopic society, prevents that utopia from materializing.) Much more frequently in Hughes's novels, it is individuals, rather than entire societies, who achieve a genuinely holistic relationship with nature. As a result of their relationship, such individuals find self-fulfillment as well as true community. Implicitly, because Hughes never allows community and self-fulfillment unless one lives in harmony with nature, neither true community nor fulfillment of self is possible when one does not live in harmony with nature.

The protagonists in Hughes's novels who succeed in achieving the ideal relationship with nature are usually from dystopic societies.[4] In Hughes's novels, a society becomes dystopic when the conditions and quality of life in it are dreadful because, first, it prevents individual self-fulfillment. The importance of individual self-fulfillment has been debated since ancient times. After Plato suggested in The Republic that individual self-fulfillment should be subordinated to corporate security and order, Aristotle, Plato's student, insisted that the sacrifice was too great a price to pay. Further, Aristotle surmised that the excessive unity proposed in The Republic could lead to social defects, such as loss of individual identity, just as insufficient unity could lead to other defects, such as loss of group cohesion (Politics 2.2).

The importance of individual self-fulfillment is a particularly prominent theme in twentieth-century dystopic literature, and Hughes's novels are no exception. Douglas H. Parker points out in "Progress and Freedom" that in Hughes's novels, "even the most brilliant social engineering and laudable designs for the general good come at too high a price when *individual* freedom is sacrificed to them" (46). But in most dystopic literature, modern technology has introduced an interesting variation on the theme; whereas the wise Philosopher King ruled Plato's utopia, technology, or an obsession with technology, often tyrannizes in twentieth-century dystopias; technology, that is, prevents individual self-fulfillment. Ironically, then, the modern version of the self-fulfillment theme betrays an attendant bias against technology on the part of many authors who write technological fiction. In The Scientific World View in Dystopia (1984), for example, Alexandra Aldridge (referring specifically to Ray Bradbury's 1950 work, The Martian Chronicles) states that in dystopian science fiction "technical achievement and a general absence of sensitivity--of interior knowledge--

combine to produce holocaust" (76). Peyton E. Richter, in Utopia/Dystopia (1975), also notes the "increasing disenchantment with a life governed by mechanization and regimentation" (14). Perry Nodelman, in "Out There in Children's Science Fiction: Forward into the Past," describes the "anti-technological and even anti-evolutionary bias" lurking behind an apparent (but not genuine) admiration of the protagonist's lust for knowledge in children's science fiction. In a later defense of his article, Nodelman summarizes:

> . . . the revolutionary fervor is always directed at destroying sophisticated and repressive technology and replacing it with trees and sunshine and flowers . . . positive change is almost always associated with the conviction that technology is nothing but repressive and with a return to the traditional values we associate with rural landscapes. ("Perils" 229)

Monica Hughes's dystopic novels certainly display this interest in "trees and sunshine and flowers," in "rural landscapes," and in the natural environment altogether. Indeed, for Hughes, the second defining characteristic of a dystopia is the society's prevention of the development of a harmonious relationship with nature. Her concerns seem typical of the genre. Richter, for example, states that such concern for nature is characteristic of recent dystopic literature: "If nature must be ruthlessly mutilated and man and society completely manipulated in order to reach utopia, is it really worth attaining?" (14).[5] Hughes seems to echo this sentiment; she repeatedly shows the potential danger that technology poses to nature and even to humanity. Consequently, she also calls into question the pursuit of scientific knowledge. She is what Ernest Partridge calls a "life scientist" because she is both "epistemologically humble and technologically conservative" (107).

But Hughes does not couple her concern for nature with an anti-technological bias, as do most writers of dystopic literature, particularly those Nodelman scrutinizes. Repressive technology is not a defining characteristic of Hughes's dystopias; in The Guardian of Isis (1981), The Isis Pedlar (1982), Beyond the Dark River (1981), and The Dream Catcher (1986), Hughes presents dystopias in societies that are not highly technological. Although she displays a decidedly anti-technocratic bias and shows the dangers of technology and exploitive scientific knowledge, Hughes does not present nature and technology as polar opposites. Indeed, technology often plays a vital role in the ideal relationship between humans and nature. Moreover, the single society that successfully achieves utopia is a highly educated society whose technology advances at a startlingly rapid pace.

In addition to her unique approach to the technology-nature dialectic, Hughes also employs a unique approach to traditional journey patterns. In an interview, she states: "Somebody said to me, 'Why does everybody go on journeys?' I don't know. Life is a journey, I suppose" (Jones, "Technological Pastoralist" 15). Since ancient times, journeys have been common patterns in literature. Homer's The Odyssey, for instance, describes the journey of Odysseus during the ten years after the fall of Troy. The biblical story of Jesus describes Jesus's journey from heaven to Earth and back to heaven. Even the Greek myths are often journey stories; the myth of Demeter and Persephone tells of Persephone's cyclical journey from the overworld to the underworld (Hades) and back to the overworld again. Stott and Jones, in their overview of Hughes in Canadian Books for Children, point out that Hughes, like the traditional writers, uses "the journey as an organizing device. In all cases, the journeyer is young, and the journey both tests identity and leads to maturity" (82). The journey, then, becomes a rite of passage, in which the journeyer must acknowledge the suitability or inadequacy of the familiar (his or her "home") and must face and deal with the unfamiliar (that which he or she encounters on the journey). Using different terms, Yi-Fu Tuan divides the familiar and unfamiliar into binary oppositions he calls "place" and "space." Space, or the unfamiliar, "has no fixed pattern of established human meaning," while place, or the familiar, is "enclosed and humanized space . . . Compared to space, place is a calm center of established values" (Space and Place 54).

In children's literature, "place" is usually home, a region in which to be happy, a region to love; place is, to use Gaston Bachelard's term, "*felicitous space*" (Poetics of Space xxxi). Most journeys in children's literature, including the journeys on which Hughes's characters embark, are quests for space that can be felicitous, that can be "place," that can be "home," if only for a short time.[6]

Jon C. Stott divides all journeys in children's literature into two basic patterns, the linear journey and the circular journey.[7] The linear journey is commonly seen in fairy tales. The protagonist's home is unsatisfactory, so he or she embarks on a "journey of wishfulfillment to a perfect place where life is lived happily ever after" (Stott, "Running" 473). The linear journey is essentially a quest for a new, more suitable, home. In recognizing the inadequacy of the first home--in science fiction the first home is often a dystopia--facing the unfamiliar, chaotic "space," searching for and finding or creating a new home, the protagonist matures and establishes his or her identity. Two of Hughes's novels that I discuss here, The Crystal Drop (1992) and Invitation to the Game (1990), are linear journeys and follow the traditional linear pattern.

The second journey pattern, the circular journey, is also a pattern that Hughes employs, but she does not use the pattern in the traditional way. The pattern of the circular journey, according to Stott, is "the type of story which ends in the place it began. Its purpose is to show how and why the central character returned to the place from whence he or she departed" ("Running" 473). Usually, the central character leaves home because of a "basic dissatisfaction" with the conditions of home and/or his or her position there (474). Like the linear journey, the circular journey begins as a quest for a new, more suitable home. But during his or her adventures in what Tuan calls "space," the protagonist learns about the chaos of space, about himself or herself, and about her or his society. Consequently, he or she is able to recognize the adequacy of the home from which she or he came, and usually wants to return to it. Maturity lies in admitting, as Dorothy in Wizard of Oz (1958) admits, that home is best after all, in identifying with the society from which the protagonist came, and realizing his or her role in that society. Implicitly, the circular journey often promotes the adequacy of home, of the familiar "place" with all of its institutions. The circular journeys in Hughes's novels, however, do not assume that the protagonist's dissatisfaction with "home" is a simple error in judgment, that "home" was adequate from the beginning and the protagonist needed only to mature in order to realize it. On the contrary, Hughes's protagonists return home not to accept it, but to change it. When they return, home is still an unsatisfactory place, but through the efforts of the protagonist, it will become felicitous space. Like many linear journeyers, Hughes's circular journeyers must create a new home, but they must do so within the place and society of the original home. Thus, for Hughes's circular journeyers, maturity also lies in recognizing the inadequacy of home, facing the threatening, unfelicitous space, and in creating a suitable home.

Circular and linear journeys are movements through two-dimensional, horizontal space. But several of Hughes's protagonists also move, literally and symbolically, through vertical space. Christian tradition organizes space vertically: heaven (the ultimately felicitous, ordered place) is up, and hell (the epitome of chaos) is down; spiritual maturity takes one up, closer to God, and eventually, to heaven, while spiritual immaturity is a downward path. Similarly, as Hughes's protagonists mature, they often climb upwards, and when they enter the depths of their subconscious, they often descend physically, into rivers and underground caves; their movement through vertical space symbolically reflects their spiritual and psychological elevation. Stott and Jones note that "climbing up is always a significant and positive action in Hughes's novels" (Canadian Books 83).

In this thesis, I explore Hughes's ecological perspective using the characters' geographical and symbolic journeys as organizing devices. In the first chapter, I examine Hughes's idea of an ideal relationship between nature and humans in light of the journey from order, a journey in which the characters leave the confines of an excessively institutionalized society and establish a holistic relationship with nature. In Chapter Two, I explore Hughes's agenda behind her ecological perspective in light of the journey into nature, a journey in which the protagonists learn the moral and utilitarian reasons for pursuing holistic relationships with nature, and act accordingly. In the third chapter, I explore the role of knowledge and technology in the ideal relationship between nature and humans in light of the symbolic journey into knowledge, a journey in which the protagonist gains the knowledge needed to create a satisfactory home. I aim to prove that the crux of Hughes's ecological perspective is her ideal relationship between humans and nature. I also aim to show that Hughes uses traditional structures, such as patterns of dystopias and linear and circular journeys, but that she does not always use them in traditional ways.

Notes

1. Hughes's picture books are Little Fingerling: A Japanese Folktale (1989), and A Handful of Seeds (1993). Gold Fever Trail: A Klondike Adventure (1974), and Blaine's Way (1986) are Hughes's historical novels, while Sandwriter (1985), and its sequel, The Promise (1989) are her fantasy novels. The realistic problem novels include The Ghost Dance Caper (1978), Hunter in the Dark (1982), The Treasure of the Long Sault (1982), My Name is Paula Popowich (1983), Log Jam (1987), and The Refuge (1989). Her largest body of work is her science fiction, which includes Crisis on Conshelf Ten (1975), Earthdark (1977), The Tomorrow City (1978), Beyond the Dark River (1979), The Keeper of the Isis Light (1980), The Guardian of Isis (1981), The Isis Pedlar (1982), Beckoning Lights (1982), Ring-Rise, Ring-Set (1982), Space Trap (1983), Devil on My Back (1984), The Dream Catcher (1986), Invitation to the Game (1991), The Crystal Drop (1992), and, most recently, The Golden Aquarians (1994).

2. Hughes's essays, seminar papers, and articles include "Writer's Quest" (1982), "My Search for Somewhere" (1987), "A Different Kind of Magic" (1985), "Perceptions of Society through Children's Literature" (1991), "Science Fiction as Myth and Metaphor" (1992), "The Writer as Mask-Maker and Mask-Wearer" (1992).

3. Even in Hughes's science fiction novels that include beings more intelligent and evolved than humans--The Golden Aquarians, for instance--those beings are a part of nature, rather than separate entities that pursue relationships with nature.

4. Dystopic societies are portrayed in The Tomorrow City, Beyond the Dark River, The Guardian of Isis, The Isis Pedlar, Ring-Rise, Ring-Set, Devil on My Back, The Dream Catcher, and Invitation to the Game.

5. Charlotte Spivack, in Merlin's Daughters: Contemporary Women Writers of Fantasy (1987), shows the importance of the natural environment, with an attendant bias against technology, to be central to twentieth-century feminist fantasy literature as well. In addition, pastoral literature also consistently portrays technology as a dangerous thing. In The Machine in the Garden: Technology and the Pastoral Ideal in America (1964), Leo Marx suggests that technology is the main threat to pastoralism.

6. To organize my discussion of journey patterns, I borrow ideas from Raymond E. Jones's conference paper, "Natural Space and Cultural Place in Terry Pratchett's Truckers" (1989). Jones uses a collection of terms to analyze Truckers and although I follow a different argument than he

does, I use much of the same terminology.

7. Stott's discussions of journey patterns can be found in "Running Away to Home--A Story Pattern in Children's Literature" (*Language Arts* 55.4: 473-477), "Jean George's Arctic Pastoral: A Reading of *Julie of the Wolves*" (*Children's Literature* 3: 131-139), and in Moss and Stott's *The Family of Stories: An Anthology of Children's Literature* (1986).

Chapter One

The Journey from Order

Environmental awareness and protection are popular contemporary concerns. Through the efforts of lobbyist groups and concerned individuals, the general public is growing increasingly aware of the devastation that our consumer-oriented way of life is wreaking on this planet. Consequently, many of the bits of nature that remain, particularly in North America, have come under legislated protection. Linda H. Graber, in Wilderness as Sacred Space (1976), says that since the installment of the American Wilderness Act of 1964, laws and regulations separate and protect the American natural wilderness from humans. The same principles apply in Canada.[1] Indeed, according to Graber, the definitive condition of the wilderness is the "absence of human beings and the consequences of their actions" (10). She says that wilderness is a place where "'the earth and its community of life are untrammeled by man and man himself is a visitor who does not remain'" (9).

Even before environmental debates became common, Monica Hughes was expressing her concern for Earth's eco-systems. In an interview with Frieda Wishinsky, Hughes speaks of her "'abiding passion'" for the environment: "'I was interested in it before we all knew there was such a great problem. . . . The idea that we're mucking up the whole thing is terribly sad and makes me angry'" (21). But

Hughes's ecological perspective, unlike the one about which Graber speaks, is not dependent upon separating and protecting the wilderness, and nature in general, from humans. Rather, her environmentalism revolves around what she envisions as an ideal relationship between humanity and nature. This relationship has two primary characteristics. First, it is an active, participatory relationship between humans and nature. In this relationship, humans are not separated from nature and nature does not have to be protected from humans. Instead, humans participate in nature's community of life, using natural resources only as necessary. Secondly, it is a holistic relationship, a whole that is greater than the sum of the two parts. Humanity and nature together produce a bond that encourages mutual growth. Nature is nurtured, protected, or restored by humans, while the humans find true community and individual self-fulfillment in and because of nature. Hughes shows that without this bond each party is less: nature is vulnerable to catastrophes, and humans lack community and self-fulfillment.[2] Although many characters and communities in Hughes's novels have active, harmonious relationships with nature, relationships in which both parties coexist without detriment to the other, only a few achieve her ideal, holistic relationship.

One of Hughes's common plot patterns--a pattern I call the journey from order--embodies her concept of the ideal relationship between humans and nature. The journey is a circular journey and has many elements common to children's pastoral literature. The most significant of these is the movement of the protagonist from the urban world to the rural world and back again. The urban world from which the protagonist comes is a dystopia. It is the object of Hughes's social and moral criticism because it prevents self-fulfillment and because it isolates citizens from nature. The protagonist withdraws from this ordered civilization into nature, which, in comparison, is a wild and threatening place. The protagonist then meets and is included in a community that lives in harmony with nature. From that community, the protagonist learns both to live in harmony with nature and to appreciate the loving nature of true community. In addition, the protagonist matures and becomes a self-actualized person concerned with needs of others because her or his personal needs have been fulfilled (Rosenhan and Seligman 119). The protagonist not only lives in harmony with nature, but achieves a holistic relationship with it. Consequently, the protagonist comes to perceive nature as an ideal place. Eventually, however, the protagonist returns to the dystopia from which he or she came. But unlike the return to urban centres in pastoral literature, this return is not one that mourns the passing of a pastoral way of life (Stott, "Arctic Pastoral" 138). Nor is it an acceptance of the structured way of life, as it often is in children's science fiction (Nodelman, "Out There" 293). Instead, this return undermines the structures of the society because the protagonist subversively urges the dystopia to develop harmony with nature. During this effort, death and rebirth imagery symbolizes the protagonist's maturity, and geographical movement, both horizontal and vertical, symbolizes her or his personal development. Because Hughes never displays community and self-fulfillment apart from nature, her novels suggest that harmony with nature is a prerequisite for human self-fulfillment and genuine community.

Although the circular journey appears in a number of Hughes's novels, I will explore it in detail in only three: The Guardian of Isis (1981), Ring-Rise, Ring-Set (1982), and Devil on My Back (1984). These novels are of particular interest for two reasons. First, each portrays a different state of nature. Secondly, the community that the protagonist discovers after moving into nature employs a different kind of technology in each novel. Significantly, since all of the protagonists achieve the ideal relationship with nature, these differences imply that, for Hughes, the ideal relationship between nature and humans does not depend on the state of nature, nor on the the type of human technology.

The circular pattern and its implications become clear when we analyze the plot of each novel. In Devil on My Back, young Lord Tomi Bentt lives in ArcOne, an entirely self-contained city whose citizens are rigidly controlled by a computer. He leaves it when he accidentally falls down a garbage chute into the river that provides water for the city. Tomi endures a rough ride down the river and tries to return home. After losing his way and eating poisonous berries, however, he must be rescued by members of a local hunter-gatherer community. When Tomi learns that his rescuers are slaves who escaped from ArcOne, he is initially enraged. Eventually, he realizes that, like them, he can only be free outside the city. Tomi becomes a contributing member of the community, but, after some time, he chooses to return to ArcOne in order to send the community necessary agricultural tools and seeds from the city storehouses. Upon his return to the city, Tomi discovers an unexpected ally in his father, the Overlord of the city, who gives him the means and opportunity to undermine the rigid city structures and caste system.

Ring-Rise, Ring-Set again begins in a highly technological, physically enclosed city with rigid social structures, but Liza, the protagonist, escapes by design. She hides in an expedition vehicle bound for the frozen north, where scientists, hoping to prevent the onslaught of another ice age, will study the rapidly expanding polar ice caps. After the sled in which she hides is abandoned, Liza is kidnapped by Ekoes (indigenous people much like traditional Eskimoes), who mistake her for one of their own.[3] Liza lives with them for nine months. When her Eko stepfather almost kills her, Liza returns to the city. There, she realizes that her people, the Techs, in their effort to shrink the polar ice caps, are poisoning the snow and thereby are killing the caribou and the Ekoes who depend upon caribou. Liza returns to the Ekoes, hoping to save the community she has come to love. But the Techs try to convince the Ekoes that, to survive, they must join the rigid Tech society in the underground city. Liza, insisting that there is another option, stays with the Ekoes for the winter and thus forces the Techs to find a non-toxic way of controlling the ice caps. Her journey, then, is a double circle: she moves from her city to a community in nature, back to the city, and then back again to the Eko community.

In The Guardian of Isis, the valley society--a subsistence agricultural society--is not separated from nature by a dome, but by a range of mountains whose low oxygen and high radiation levels are toxic to humans. Jody N'Kumo, banished from the valley for failing to submit to social structures and taboos, journeys into the mountains, fully expecting to die. Instead, he meets a small, highly technological community consisting of one robot, Guardian, and one genetically altered woman, Olwen Pendennis. From them, Jody learns the dynamics of true community and is physically and spiritually rejuvenated. After helping Guardian and Olwen reroute the river so that it does not flood the valley, Jody returns home, determined to undermine the stifling structures of the valley society.

The protagonists in these novels come from societies that, by Hughes's standards, are dystopic because their rigid structures prevent self-fulfillment and because their physical isolation prevents harmony with nature.[4] ArcOne, in Devil On My Back, is the most structured, most discriminatory, and most oppressive of the three societies, as well as the furthest removed from nature. This highly technological society is governed by a computer, which determines class of each individual, regulates daily activities, and controls desire. (Ironically, the lowest caste--the slaves--are not connected to the central computer: they have free will, but because of the caste system, they have little freedom.) With the exception of escaped slaves, no citizen has left the Dome for over a century. The entire City is ruled by Overlord Bentt, whose name reflects the crooked morals of the caste system, as well as the posture imposed by the weight of implanted computer infopaks.

The City in Ring-Rise, Ring-Set is not as rigidly stratified as the one in Devil on My Back, nor is it as alienated from nature because its citizens can temporarily leave the dome. Nevertheless, the City in the Hill is also dystopic. Whereas ArcOne is governed by a computer, the City is governed by a scientific mandate so single-minded that it functions as a religion: "There were no gods in the City, unless you chose to call Science a god" (30). The City is organized, first, by gender and, second, by duty. The scientists, an all-male group, dedicate their time to research, while the women tend to household duties on a rotational basis.[5] In order to stifle any individualism that might manifest itself in such an ordered society, the citizens wear identical uniforms; to wear a distinctive uniform is a punishment (12). The ruler of the City, Master Bix, is a kind, relatively open-minded man, whose efficient and practical nature always wins over his compassion.

Unlike the other two societies, the colony in The Guardian of Isis is neither technologically advanced nor concerned with the acquisition of knowledge. Rather, it is an agrarian society with only the simplest of tools and no formal education system. Nevertheless, the Isis colony is also dystopic. It employs a unique caste system, in which generations determine rank, duty, and mealtimes. The leader of the Council and of the colony, President Mark London, rules dictatorially. The society is further ordered by an extensive set of rules, ceremonies, superstitions, and taboos, reminiscent of the most ritualistic of cults. Indeed, the entire civilization reeks of religion gone bad: "Sometimes the younger children got the two muddled--God and President London" (7).

In addition to the social strictures, the women in each society endure gender regulations that further prevent self-fulfillment. Without exception, the societies' reason-inspired insensitivities force women into positions inferior to those of men, regardless of their skills or abilities. Undoubtedly, this is because Hughes believes

> . . . that in times of stress, all our fine ideals about equalities between the sexes go by the board. It's happening even now when it is said that we can't afford to have equal opportunities. It's got nothing to do with ethics at all. They just say we can't afford it. (Jones, "Technological Pastoralist" 12)

The literal enclosures that separate the societies from nature are metaphors for the closed minds of the rulers (Nodelman 287). The society in Devil on My Back exists to preserve and further knowledge, but its knowledge is myopic. Rather than sending expedition teams out to gather the knowledge necessary to reestablish society outside, the Lords direct their energies inward, researching theoretical issues such as "'the problems of whether Learning is a finite or infinite series'" (10). Indeed, they know so little about the outside that some Lords are unable to look outside without fear (23). Similarly, the citizens in Ring-Rise, Ring-Set, despite their extensive scientific knowledge, fear the outside. To them, it is an unfriendly place, "'nothing . . . but cold and emptiness'" (13). Their superstitious fear is heightened by legends of "'savage Ekoes'" (4) who "live under the snow and jump out on unsuspecting travellers . . . and drink their blood" (38).[6] The mountains that enclose the Isis settlers serve the same purpose as a dome and symbolize the settlers' closed minds. Because of the thin atmosphere, nature outside the valley is truly hostile to the settlers. The Council does not try to adapt to or to accomodate nature outside the valley. Instead, it forbids the colonists to leave the valley and, presumably, destroys the altitude gear.

One can read between the lines of Hughes's negative portrayal of the technological societies in Devil on My Back and Ring-Rise, Ring-Set the warnings of potential dangers of technology. But since the agrarian Isis valley society is every bit as dystopic as the Tech society in Ring-Rise, Ring-Set, one must conclude that technology is not a prerequisite for dystopia. Both the technological and agrarian societies come under Hughes's stern social and moral criticism because their excessive internal structures and single-mindedness of purpose suppress individual self-fulfillment and separate humanity from nature. Even a society like Ark Three, in Hughes's The Dream Catcher, whose primary goals are "warm togetherness" (13) and "peace and friendship" (20), can be dystopic because it tyrannically demands conformity and it physically isolates humans from nature.

Because the protagonists are clearly products of their societies, their negative attributes reflect the limitations of those societies. Each protagonist, at the outset, is egocentric. According to humanist psychologist Abraham Maslow's hierarchy of needs, egocentrism is a natural result of a society that suppresses self-fulfillment. Only those whose needs of self are fulfilled can be "self-actualizing people [who] tend to accept themselves and others. . . . tend to be problem-centred rather than ego-centred, concerned with problems that exist outside of themselves" (Rosenhan and Seligman 119).[7] Each protagonist demonstrates Maslow's esteem needs--needs for competence, approval, and recognition. Tomi's rude and dismissive attitude to Seventy-Three, the family slave, betrays his low esteem and his selfish, demanding, and insensitive nature (*Devil* 25, 26). Tomi further reveals his egocentrism when, despite the compassion he feels for his friends who are condemned to be workers or slaves, he gloats over his own status and Dreamland experience (5, 11). Liza's self-centredness, in *Ring-Rise, Ring-Set*, is most apparent in the way she regularly uses people. She skilfully manipulates John, her boyfriend and potential fiancé, solely to gain the information necessary for leaving the City. Later, she manipulates Namoonie, her Eko boyfriend, to help her return to the City. Her selfishness goes hand in hand with a shortsighted need for immediate gratification. Her roommates are victims of her flaws when she is called to Bix's office on short notice: she uses Win's comb (and doesn't clean it) (13), Letty's best hair ribbon (and ruins it) (13), and a towel that doesn't belong to her (7). Liza's desire for recognition, to "show those men just how useful she could be," further betrays her egocentrism (13).[8] In *The Guardian of Isis*, Jody's egocentrism is most evident in his craving for acknowledgement. He boasts at length to Tannis Bodnar of his hunting skills and his many ideas for inventions and improvements. His boasting eventually leads to his expulsion from the valley: news that he repaired a light fixture reaches the President, who interprets that action as a sacrilege.

Other negative attributes of the protagonists also indicate needs that, according to Maslow, cannot be met in a society that suppresses individuality and self-fulfillment. For instance, Maslow suggests that the urge for cognitive satisfaction--the need for knowledge and understanding about the world--must be fulfilled before a person can be self-actualized (Rosenhan and Seligman 119). Early, in Devil on My Back, Tomi has not met this need for cognitive satisfaction. Like his fellow Lords, he allows the computer to make even the smallest decisions for him, such as whether or not to eat his morning eggs when he feels sick (2). Despite his access to vast amounts of information, reflected in the root of his name--he is like a tome, a scholarly, ponderous book--he must learn to think for himself. Jody's craving for knowledge and truth reveals his need for cognitive satisfaction as well. Although he believes the myths and superstitions promulgated by the Council, he is filled with "many questions to which [he] had no answer . . . that he knew by now not to ask" (Guardian 4).

The dystopias, then, come under further criticism because they induce inadequacies in their children. But the protagonists in these novels are also admirable, for they overcome these inadequacies. The protagonists, that is, demonstrate personal qualities that place them in opposition to the value systems of their societies. These qualities show their potential for positive change. Thus, each protagonist questions the social rules and structures. In addition, each dreams of life outside his or her society. Lois R. Kuznets, in "The Fresh-Air Kids, or Some Contemporary Versions of Pastoral," shows that, in pastoral literature, a protagonist's "potentiality for transformation" may be "expressed in his propensity to dream" (157). Most importantly, though, each protagonist demonstrates a potential for positive change through her or his affinity to nature--a rare quality in these segregated societies. Tomi, for example, does not think independently, but he does indicate a capacity for original thought by questioning the Arc structures. He wonders, for example, whether luck is the only element separating him from the slaves (Devil 3), and whether the Arc's method of accessing knowledge is adequate (8). Although the computer controls Tomi and his dreams, Tomi chooses a Dreamland experience that takes him outside and informs him about nature. He then compares his experience with the outside view at the top of the Dome. His curiosity about the outside, as well as his reluctance to return underground (25), indicates Tomi's slight, but legitimate, affinity with nature, one that is greater than that of his fellow Lords.

Liza, in Ring-Rise, Ring-Set, instinctively resists the City's structures--the gender discrimination, the trivial duties assigned to her, her inevitable marriage at age twenty, and the unvarying conformity. Her resistance is very much a feminist one because it concerns the shattering of gender stereotypes. But, most significantly, she stands out from the others because she feels drawn to nature. Her dreams revolve around her affinity to nature. She dreams of going outside in winter, of escaping the City, which has become her "prison" (3), of living in a house--which would not be sealed from nature for eight months of the year--rather than a dome. Nature is her ally, not her enemy. When she closes the winter shutters, "she felt as if, in shutting out the sun and the moving leaves and the waters of the creek, she were denying life" (1). Indeed, in the first chapter Liza is locked out of the City because of her intense drive to be physically close to nature. Nature, for Liza, is cathartic: the creek water is "sweet and living" (2), and its sound "washed away her anger" (5).[9]

Similarly, Jody questions and resists the structures of his society; he wonders, for instance, why women are inferior (Guardian 3) and why taboos exist (6). In addition, he dreams. He dreams of inventions that allow safe passage out of the valley into the nature beyond. He dreams that "one day he would somehow be able to dodge the taboos and find a way of climbing out of the Valley and seeing for himself exactly what lay behind those high forbidding peaks that surrounded them" (8). This dream inspires Jody to develop the physical strength and stamina that he later requires for his journey (8). From the beginning, he is closer to nature than any other colony member; climbing the Cascades and looking out onto the unexplored Isis does not fill him with the fear that the others experience, but with exhilaration and delight (28).

The protagonists have two important qualities. First, their affinity to nature allows them to overcome the inadequacies imposed by their dystopic upbringings. Because of this affinity, they seek, consciously or unconsciously, a harmonious relationship with nature. In turn, this relationship leads to the self-actualization and genuine community that are the unspoken, perhaps unconscious, goals of their journeys. The second quality is the protagonists' own resolve to survive. This drive is necessary because they journey, to use Yi-Fu Tuan's terms, from familiar "place," a "calm center of established values," to unfamiliar "space," which "has no fixed pattern of established human meaning," and is dangerous and intimidating (Space and Place 54).

The journey into nature, that is, is inevitably a flight into a landscape that exhibits much more than Graber's "absence of human beings and the consequences of their actions" (10). It is a wild, chaotic place that threatens the protagonists who know only protected civilization. Nature, is for them a hostile, chaotic wilderness. Tomi is badly bruised and beaten by his river ride and nearly drowns.[10] Dry land is little better; once he is out of the river, he suffers from cold and hunger, and he nearly dies a second time when he ignorantly eats poisonous berries (Devil 55). Although the warm sled, stocked with provisions, protects Liza from immediate danger and provides her with a tiny bit of familiar "place," the barren landscape, with its vast, confusing whiteness and extreme temperatures, threatens her with death whenever she leaves the sled (Ring-Rise 31-32). Similarly, the regions outside the valley are wilderness to Jody. No animals or extremes of weather threaten him, but the lack of oxygen and increased solar radiation make the environment hostile to a boy without altitude gear:

> ...the thin air began to make him light-headed. His chest hurt him all the time. It was a dull nagging pain that he accepted unquestioningly as part of his new life, like the blisters on his feet, the sunburn, and the unexpected fits of drowsiness that sometimes overcame him, even at noon. (Guardian 78)

In spite of the probability of death, the protagonists demonstrate resolve, a refusal to succumb fatalistically to death, and, perhaps, a refusal to see nature as the enemy. Tomi, for instance, is no longer consumed with the self-pity that reduced him to tears during the slave revolt (Devil 33). Instead, he shouts, "'It's stupid to die now. I won't die. I won't'" (45). Liza, believing that she will be alone in the frozen wilderness for a month, similarly announces, "I won't die. . . . I haven't done a single useful thing and I'm not going to be remembered as a horrid example of what happens to girls who get ideas above themselves" (Ring-Rise 30). In spite of the temptation to give up and let death come Jody, too, demonstrates the resolve common to Hughes's protagonists by obstinately moving on and on (Guardian 76-77).

Although the wilderness can be a chaotic and threatening space, it has also been a place of spiritual significance since ancient times. In the Old Testament, the prophet Elijah escapes into the ultimate wilderness, the desert, where he finds both spiritual and physical renewal (I Kings 19:1-18). In the New Testament, Jesus, seeking the same rejuvenation, retreats to the desert for forty days (Mark 1:13). Susan Power Bratton, in her article "Original Desert Solitaire: Early Christian Monasticism and Wilderness," shows that in early monastic tradition the monks followed Jesus' example and regularly sought the solace of the desert.[11]

Like those of the ancient prophets and monks, the protagonists' journeys into the wilderness are journeys of spiritual renewal and maturation. Maturity comes partly because the protagonists unexpectedly become part of a true community in the wilderness. Although its patterns of human meaning are much different from those in the dystopic society, this community is still, in Tuan's terms, a "place," for it is "a calm center of established values" (Space and Place 54). Free from discrimination, it is a warm, loving community that lives in harmony with nature. As part of this harmonious relationship, the humans do not isolate themselves from nature in order to protect it. Rather, they participate in nature's "community of life." This active, participatory quality is one of the two characteristics of Hughes's ideal relationship with nature. Environmental philosopher Erazim Kohák supports Hughes's perspective. In The Embers and the Stars (1984), Kohák suggests that extensive environmental abuse provokes humans who first rediscover nature to do so in self-negation; because the world of nature is a world without humans, one must withdraw from nature completely if one is to respect it. The laws and regulations of which Graber speaks are an excellent example of this perspective. Kohák notes that such withdrawal is "understandable enough as long as the basic metaphor of human presence is the bulldozer," as it so often is (90). But Kohák states that, ideally, we must strive to "become a part of the balance of nature" rather than withdrawing from and preserving nature like an inorganic museum artifact as Graber would have us do (99). The wilderness communities in these novels are part of this balance. Although they are careful not to waste or abuse natural resources, they hunt animals for food and clothing, and they use trees for fuel and building materials as necessary. Through the positive, often idyllic, portrayal of these communities, Hughes expresses admiration for their ways of life; by contrasting them with the excessively ordered societies, Hughes further criticizes the latter.

Although the proposal for "becoming a part of the balance of nature" that Hughes and Kohák share sounds like a noble and attainable goal for environmentalists, it is, in fact, quite the opposite. If each human currently living on Earth were to leave the urban centres to pursue an active relationship with nature, being careful not to waste anything, Earth's resources would soon be used up; when too many humans inhabit a particular region, the trees cannot replace themselves quickly enough and disappear, and the animals soon become hunted into extinction. Hughes's ideal relationship with nature can work only in locations where the human population is sparse; it would be possible only under disastrous conditions, in which most of the human population would be destroyed or somehow removed from Earth.

Hughes is able to create conditions in which her ideal is possible simply because she creates science fiction novels. In Devil on My Back, the Age of Confusion has forced small populations into underground cities, and presumably, has wiped out the remainder of the human population. Consequently, there is a vast expanse of nature with which the ex-slaves can enjoy an active relationship. In Ring-Rise, Ring-Set, the majority of the human population is forced to move south, leaving the vast northern lands for the Ekoes to have an active relationship with nature. And in The Guardian of Isis, Earth is overcrowded, and a small band of humans moves to another planet, where there is enough space, wood, and game to achieve an active relationship with nature, at least until that planet, too, is overcrowded. Practically speaking, however, Hughes's ideal relationship with nature is not possible on the planet Earth, given the current size of the human population, and, thus, it is of little environmental value, for it cannot improve current circumstances on Earth. In the final analysis, then, Graber's proposal to separate humans from nature is the more realistic, and perhaps, more moral one.

In these novels, however, the practicability of Hughes's ideal is not an issue, for the fictional wilderness communities enjoy ample space and an active relationship with nature. The community contributes significantly to the protagonist's maturation, teaching her or him, among other things, to live in harmony with nature, to seek an active, participatory relationship with it. From the members' harmony with nature and with each other, the protagonist also learns the loving nature of true community. Tomi, in _Devil_ _on_ _My_ _Back_, meets a hunter-gatherer society of ex-slaves and their children. These people maintain a subsistence life that revolves around nature and its seasonal cycles. From them, Tomi learns to survive, indeed, to thrive, in the wilderness. Previously a vegetarian, Tomi now eats meat, a sign of his burgeoning harmony with nature, a sign that he is plugging into its cycle of life (104). Although all members of the community must work hard to survive year-round, life is not oppressive, for they work as equals and have adapted well to their environment. Indeed, were it not for their reliance on ArcOne for some key technology, the ex-slave community would be a utopia. (Since the earth is stripped of minerals, they are unable to forge their own tools. Consequently, when the tools inevitably break, they must acquire replacements from the Arc).[12] Tomi becomes a contributing member of the community and falls in love with a young woman. The fact that she returns his love demonstrates Tomi's success in understanding true community.

In Ring-Rise, Ring-Set, Liza is kidnapped and adopted by a nomadic Eko community whose life revolves around nature and its cycles. The Ekoes identify with nature so completely that they *are* nature: "'We are the caribou. Kill the caribou and you kill us. We are the land. Kill the land and you kill us'" (123). Indeed, they are not entirely unlike the migrating animal herds. They find water instinctively, without the aid of tools (77). Their sense of direction in a land without landmarks is truly uncanny; they need no maps or navigational instruments, and they never lose their way. Even the squat, muscular stature of their bodies and the dark colour of their skin are suggestive of animals, as is the fact that they do, indeed, live under the snow. That they leave no lasting human artifacts behind them when they move is further evidence that they successfully embody nature.[13] Because she lives in the Eko community, Liza, formerly a vegetarian, takes her place at the top of the food chain: the Eko diet is composed entirely of animal products--meat, fat, and blood--and they make their clothing and tents from animal skins.[14] Family warmth and togetherness are crucial to and define their culture. Liza becomes a fully contributing member of the community and even grows to love an Eko man. Her love, like Tomi's love, is returned, a sign that, despite her dystopic background and egocentric nature, she fully understands, and is capable of participating in, genuine community.

Jody, in Guardian of Isis, also meets a loving community living in harmony with nature, Olwen Pendennis and her all-in-one mother-father-companion-servant robot, Guardian. If it were not for its inevitable termination (neither Guardian nor Olwen will ever reproduce), this community would also be a utopia. Indeed, the location of the community--at the top of a mountain--symbolizes the physical, moral, and spiritual superiority of this community over the valley society. This community's technology is far more sophisticated than anything in the domed cities of Ring-Rise, Ring-Set and Devil on My Back. The members of the community, Guardian, the wise and versatile robot, and Olwen, the genetically and surgically altered woman, are themselves evidence of this. Even their harmonious relationship with nature does not exclude technology, but depends on it. Guardian, the robot, prepares the food they eat--game and plants, mixed with his own special concoctions. Their house is made of Isis rock enhanced with other elements Guardian has created or found on Isis. Even their living place, the mountains feared by the colonists, is suitable only because Guardian has altered Olwen so that she can breathe the thin air and because he is able to oxygenate rooms for visitors. In some ways, Jody's discoveries are opposite to those usually implied in dystopic literature: he learns that technology can be a wonderful thing, that it can aid nature and can act as a catalyst for, rather than an obstacle to, harmony with nature. He also learns the loving nature of true community from the tender relationship between Guardian and Olwen, and from the genuine care he receives from them. The castes of the valley do not exist here; each member of the community helps the other, and neither is superior to the other.

The Olwen-Guardian community surpasses the Eko and ex-slave communities, for it exercises Hughes's ideal relationship with nature. Not only do Guardian and Olwen live in harmony with nature, but they also achieve a holistic relationship with it. That is, both parties are greater because of this bond. That they benefit from Isis is evident, but it is important to note that nature also benefits from them. When the planet's tectonic plates move and close a volcanic vent, much of Isis is cut off from water. Consequently, plant and animal life are threatened. Using lasers, explosives, and other technological devices, Jody, Olwen, and Guardian restore the river to its natural course, and prevent desertification of a large portion of Isis.

Jody, Liza, and Tomi, then, learn the dynamics of genuine community from the societies they meet on their journeys. Significantly, they find such community only in populations that live in harmony with nature; true community is impossible in the dystopias because they are polarized from nature. The communities that Liza and Tomi discover are clearly modeled after indigenous peoples. Hughes's novels, both the science fiction and the realistic fiction, frequently laud indigenous peoples. One might assume, then, that Hughes prefers the indigenous cultures to societies that rely more heavily on modern technology. This assumption, however, is incorrect. It is not the indigenous or non-technological elements that Hughes admires. Rather, Hughes admires these societies for their attentiveness to nature.[15] Indeed, in the three novels discussed here, the community that most closely achieves Hughes's ideal relationship with nature has the most sophisticated technology--Guardian and Olwen. Perhaps Liza's explanation to the Ekoes says it best:

> "Techs have learned to survive by making machines to fight the cold instead of adapting to it, to make food instead of hunting for it. It is a different way. It is not better than yours or worse. Only different." (120)

In addition to discovering genuine community in harmony with nature, each protagonist matures and is self-fulfilled in nature. Since Hughes never allows self-fulfillment unless the character is in harmony with nature, she implicitly argues that fulfillment of self is impossible apart from nature. The crucial role Jody plays in the rescuing of Isis nature--he plants the explosive that frees the river--is evidence that he develops a holistic relationship with nature.[16] Simultaneously, and perhaps consequently, Jody matures and becomes one of Maslow's self-actualized people. His journey towards maturity is not only symbolized in horizontal physical movement--from familiar "place" to the chaotic "space" of the wilderness--but also in vertical movement. Hughes, in a 1986 interview, states: "I do find that mountains are very spiritual. I don't like living down at the bottoms of valleys" (Jones, "Technological Pastoralist" 10). Jody survives his journey to the heights because he has evolved physically beyond his fellow colonists, thanks partly to his physical training and largely to his East African ancestry. Symbolically, he survives outside the valley because he has evolved mentally while the other colonists fiercely resist change of any kind.[17] Welwyn Wilton Katz, in a review of the Isis trilogy, states, "The heights are a symbol, of course; their deadly beauty accessible to humans only through change: physical change such as Olwen's, and mental change such as Jody's" (64). Jody's evolved state and subsequent ability to survive upper Isis are indicative of his internal harmony with nature. Upper Isis does not kill him because he is not at odds with it. Instead, it accepts him, encourages his further mental and physical evolution, and fills him with contentment: "Alive or dead, this beauteous valley was where he wished to be" (80-81). Indeed, it is a paradise to Jody, complete with celestial "soft booming music, deep and noble" of the bamboos (81).

Here, at the top of Isis, Jody becomes self-actualized. He fulfills his need for cognitive satisfaction, for knowledge and truth. He learns about the colony's history (111-12), the falseness of its taboos and superstitions (110, 114), the true nature of death (96, 114), the mechanical, rather than divine, nature of Guardian (113-15), and advanced technology. He also fulfills his esteem needs, and consequently, overcomes his egocentric craving for acknowledgement. By the time he returns to the valley, the craving is gone: "For a second he thought about the glory that might be his, and then he shrugged and laughed" (140).

Since his personal needs are fulfilled, Jody turns his attention to problems outside himself, in this case, to those of his fellow colonists. He willingly risks his life to save them from the flooding river, although they rejected him and sentenced him to death: "'They are my people. I will do whatever you tell me'" (121). During this, his first altruistic act, Jody has a death and rebirth experience that symbolizes that he is a new, mature person. After placing an explosive in it, he emerges from the sinkhole, reminiscent of a birth canal:

> He let out a yell of pure joy. He couldn't help himself. It was just as if he had been reborn. But this time was different. The first time he had had no say in the matter. . . . The second birth was the birth of Jody N'Kumo, man. Himself. (133)

In keeping with his heroic act and his rebirth, Jody is renamed "Lionkiller" (139).[18]

Tomi, in Devil on My Back, also develops a holistic relationship with nature and simultaneously becomes a self-actualized person.[19] Like Jody's, Tomi's maturity is symbolized by vertical movement and by death and rebirth imagery. The truth about ArcOne that the community members share with him is so shocking, and yet so logical that Tomi is forced to do as they suggest, to "'think for yourself for once in your young life'" (93).[20] Thus, he fulfills his need for cognitive satisfaction and achieves independent thought. His remorse at being part of the tyrannical system signifies his fulfilled esteem needs, for it suggests that he is no longer egocentric. Tomi goes down into the river, symbolically descending into his subconscious, for a death and rebirth experience. After a few days of unconsciousness, the state of symbolic death, Tomi revives as a new person, his reborn state symbolized in infantile behaviour:

> She fed him spoonful by spoonful as if he were an infant. Obediently he opened his mouth and then swallowed the delicious soup and smiled

> at her . . . . When he had finished . . .
> he burped contentedly . . .(97-98)

After his rebirth, Tomi learns to live in harmony with nature. His spiritual maturity is symbolically reflected in his ability to climb a tree without succumbing to vertigo (105), something he was unable to do previously. Tomi demonstrates his maturity when he plays the role of a parent to ex-slave Six-Hundred-Ninety-Two. When he holds the wounded man's head in his lap, "He felt as if he were watching his own child die" (111). By rubbing the ex-slave's limbs vigorously, Tomi gives him life, and true to his parental role, names his new child, "'Stargazer'" (117). Their roles gradually reverse, however. Tomi teaches Stargazer everything he knows, but Stargazer eventually becomes the father figure to Tomi, offering to adopt him: "'And I'd be real proud to make it official like and have you as a son'" (130). Lois R. Kuznets states that

> in literature, if not in life, when orphans finally find their parents they usually no longer need them as *parents,* having found an identity that first incorporates and then transcends them. Indeed, the parents themselves are often in need of the help of their children. (162)

Undoubtedly, that is the case here. As much as Tomi enjoys the friendship of Stargazer, he has matured beyond the need of a parent figure. Stargazer, on the other hand, needs Tomi to overcome his slave mindset. When he discovers that Tomi was formerly an ArcOne Lord, his anger and the ensuing fight demonstrate his reluctance to let go of the slave-Lord dichotomy. But in the last moment, when he chooses not to kill Tomi, he becomes truly free. Tomi's freedom from his old self is clear here as well, for he graciously offers to leave the colony so that Stargazer is not made uncomfortable by the presence of a former Lord (122).

The wilderness that twice nearly killed him is no longer malevolent or chaotic "space" to Tomi. Instead, it has become the ultimately felicitous "place," for it is "a paradise" to Tomi (132). Clearly, he is a better person because of his positive relationships with nature and with the people who live in harmony with nature. A truly holistic relationship with nature, however, requires that nature must also benefit. When Tomi sacrifices his new freedom and returns to the Dome to send the outside community agricultural supplies from ArcOne, he also aids nature: he sends out the seeds of plants that once flourished in the region, thereby reintroducing plant species to nature and increasing its fertility. Tomi's sacrifice, then, becomes a catalyst that will allow the community to evolve into an agrarian society that not only enjoys a harmonious, but also a holistic relationship with nature, for their cultivation of the earth will increase nature's fertility.

Although the Ekoes live in almost unbelievable harmony with nature, Liza is the only character to achieve a holistic relationship with nature in Ring-Rise, Ring-Set. Hughes clearly favours the Eko way of life over the Tech's, but she also clearly shows the limitations of the former.

One might expect the Eko life to be the ultimate holistic relationship with nature because the Ekoes so fully embody nature. However, because they are a part of nature, they cannot aid, nurture, or protect it, for they are as vulnerable as it is; its weaknesses are inevitably their own.[21] Liza can achieve holism only when she steps back from her Eko identity as part of nature into a position from which she can help nature, from which she can save both the human population that embodies nature, and an animal population, the caribou. Simultaneously, she becomes a self-actualized person, her maturity symbolized in death and rebirth imagery. Her journey to maturity, however, is more complex than that of Jody or Tomi. When Liza first joins the Ekoes, she fully suppresses her identity and assumes that of the Eko girl, Iriook. Buried under the guise of Iriook, Liza is symbolically dead for an entire winter. It is not until Agaguk chokes Iriook, with the intent of killing her, that Liza is resurrected. In order for Liza to have a second chance at life and at maturation, Iriook must be physically and symbolically choked and rendered unconscious. As was the case with Tomi, Iriook's unconsciousness is a symbolic state of death. The moment that she is consciously Liza again, she manipulates her fiancé to help her return to the city. But Liza's mental changes are evident for she immediately feels remorse for the effects of her actions on her Eko family:

> What will [Kidlak] do when I have left? Liza thought. What can I do to make it up to her?

> . . . . For an instant her resolution weakened, as she thought about their love. They had saved her life. They had cared. (69)

Despite her remorse, Liza returns to the City, but it is the last time that she uses another person to achieve her ends.[22] Instead, her concern for the Ekoes gradually intensifies. When she learns that the poisoned snow is a Tech product, she realizes that she is the only one who values the Ekoes and the caribou enough to save them. (Although the Techs do not want the Ekoes to die, they are willing to have the caribou perish.) Liza's wilderness experience has instilled in her a moral imperative completely contrary to the efficient Tech value system.

On the one hand, Liza's personal cost in saving the Ekoes and the caribou is great. In order to convince the Techs to stop poisoning the snow, Liza sacrifices her comfort and safety in the City and once again becomes Iriook, once again lives with cold, hunger, and fear of death, not to mention the volcanic nature of her adoptive father. On the other hand, Liza's sacrifice brings personal rewards. Her return to the City makes her realize that, despite its physical comforts, the City is inadequate. The uncomfortable, dangerous, dirty life outside is closer to paradise than the Tech conveniences of the City, for the Eko life is one of communal warmth and affinity to nature. Because Techs "'fight the country'" (115), they are alienated from it:

> The land stretched emptily away in every direction, unyielding, eternal. It seemed to

> Liza that it rejected her and her kind utterly.
> She shivered. (116)

The Ekoes, conversely, "'bend to Nature and learn her ways'" (120).[23] Given the affinity to nature Liza demonstrates in the first chapter, it is no surprise that she allies herself with a community that is so much a part of nature. The wilderness, once hostile, is now a place of emotional comfort, communal warmth, and genuine freedom.

Liza's maturity is reflected in her name on the last page of the book: "Liza/Iriook" (129). Although the Ekoes accept her as Iriook and assume that "'Liza is dead'" (123), she has overcome her initial shortcoming and has accepted herself and, thus, keeps "Liza" as part of her name. Liza's acceptance of her Tech heritage is further evident when she tells her children, years later, of her dramatic entrance to the Dome when she first returned to the City (79).

What was once a hostile wilderness, then, becomes for each protagonist a felicitous place. Like the ancient monks, the protagonists find the wilderness a place of spiritual nurture. The "wildness" of nature is thus relative to the protagonist's state of mind. It is wild, chaotic, even hostile "space" when the protagonists are at odds with themselves, with other humans, and with nature. But as they mature spiritually, they find harmony with self, others, and nature, and the wilderness loses its "wildness" and becomes instead a "place," a "calm center of established values" (Tuan, _Space and Place_ 54).

The protagonist in each novel achieves a holistic relationship with nature, but each novel portrays a different state of nature. In The Guardian of Isis, nature is at its most pristine, virtually untouched and unseen by humans other than Olwen and her parents. Since the settlers never go beyond the valley, the remainder of Isis is, according to Linda Graber's definition, a true wilderness. Nature in Ring-Rise, Ring-Set is at its most vulnerable: it is at the mercy of the ring and is about to be consumed by malignant polar ice caps. To survive, nature requires the aid of human technology; this situation, of course, further reveals Hughes's positive attitude toward technology, as well as her belief that technology and nature need not be divorced from each other. In Devil on My Back, Hughes depicts a recuperating nature: it is recovering from damage inflicted upon it by humans. The earth was depleted of its minerals and natural resources, and the surface of the planet was undoubtedly severely scarred during the riots and fires of the Age of Confusion. Despite the previous damage, nature is healing. The plant and animal populations flourish, and, except for the refuse ArcOne dumps into the river, the water and air are pollutant-free. Because each protagonist successfully develops a holistic, active relationship with nature, Hughes shows that an ideal relationship with nature is possible at any stage of nature: pristine, vulnerable, recuperative, or otherwise.

The protagonist's role in the holistic relationship with nature, however, depends on the state of nature. If nature is vulnerable to catastrophe, as it is in both *The Guardian of Isis* and *Ring-Rise, Ring-Set*, the protagonist's role is to protect it. Implicitly, cataclysmic events, although they are "natural" disasters, are not parts of Hughes's nature but threats to it. The motion of the tectonic plates in *The Guardian of Isis*, for instance, is a natural disaster that could change the course of a river and desertify a portion of the planet. Change is part of nature, (as is the development of a desert) but it is a part that Hughes seems to resist. Similarly, in *Ring-Rise, Ring-Set*, the ring around Earth is a natural disaster, remnant particles of comet dust that will block the sun and induce another Ice Age. Earth has endured and survived one Ice Age and could probably endure another. Of course, after the second Ice Age, nature would be much different. Perhaps it is the extreme nature of these disasters as well as the disorder and purposelessness they represent, rather than the element of change itself, that forces Hughes to exclude them as parts of nature. This exclusion, however, suggests that her ideal relationship with nature works not only towards an ideal state of humanity (self-fulfilled, part of a true community, and holistically bonded to nature) but also towards an ideal state of nature. This ideal state becomes clearer upon examining Tomi's role in the holistic relationship with nature. Since nature, in

Devil on My Back, is not particularly vulnerable, it requires no protection. Instead, Tomi provides it with cultivation to increase fertility. Clearly, Hughes's ideal state of nature is a pastoral landscape and way of life; when humans are not needed to protect nature, they play the roles of farmers. Her assumption that agrarian cultivation is an improvement over the hunter-gatherer life suggests that she prefers the "middle ground" of which Leo Marx speaks in *The Machine in the Garden: Technology and the Pastoral Ideal in America* (1964). The pastoral ideal is further admired in Hughes's *The Crystal Drop*, and *Invitation to the Game*, two novels I will discuss in later chapters. Environmentally speaking, however, this pastoral ideal, however quaint, is problematic; cultivation automatically reduces the variety of plant species and thus compromises soil nutrients and integrity (Tuan, *Man and Nature* 12-13). Although proper cultivation does minimal harm to the environment (an issue Hughes explores in *The Crystal Drop*) the pastoral state of nature is not an ideal state towards which humans should work, for eventually, nature would suffer.

The final leg of the circular journey, the protagonist's return to her or his original home, usually implies acceptance of that society's way of life. In Hughes's novels, however, the protagonist's return to his or her home does not imply this acceptance. Despite the protagonist's preference for life outside the ordered civilization from which he or she came, she or he returns voluntarily to that society. But the return is a subversive act: the protagonist returns to undermine the excessive structures and to change the society, to shape it into a felicitous "place," one closer in essence to the place the protagonist discovered in nature.

Tomi undermines the tyrannical system in the Dome by creating dreams that instill longings for equality, freedom, and the outdoors. His act is genuinely subversive: it intentionally undermines the caste system and computer-generated contentment, and it provokes dissatisfaction with Dome life. The end of Tomi's journey marks the inevitable beginning of the Dome's journey to true community and harmony with nature.

As already noted, Liza's journey is a variation: Liza follows a double circle that symbolizes changes in two societies. Liza's actions, that is, start both societies on their journeys towards understanding, instead of fearing, the other culture. Liza's return to the Eko community is a politically subversive act against the City. But where Tomi's subversion is quiet and even hidden, Liza's subversion is overt and aggressive. The Techs present to the Ekoes two options: stay outside and die of hunger, or join the City-dwellers in their underground prison. Liza brazenly challenges the City's mandate of efficiency and insists on a third option: although it may be less efficient, scientists must find a way to melt the snow, a way that will not wound nature. Liza stays with the Ekoes, knowing that the ethnocentric Techs will work more diligently to save her life than they would to save the entire Eko and caribou populations. Thus, in leaving the City a second time, Liza encourages the Tech society to begin its journey of maturation, to broaden its single-mindedness, and to shed some of its efficiency and rigidity for the benefit of nature and the people who embody it. In identifying with the Ekoes, Liza also introduces into that population an element familiar to the Techs, namely, herself. That familiar element will lessen the Techs' ethnocentric fear of the unfamiliar Ekoes.

Liza's move back to the Eko community, which completes the second circular journey, fulfills another function. Her presence in the Eko community, as well as the stories she tells her children (79), is a constant reminder to the Ekoes that she, though now a familiar person, was once a Tech. Consequently, their fear of the Tech culture is lessened in the same way that the Tech fear of the Eko community is lessened. The second loop of Liza's double circular journey is necessary, then, because both societies, Eko and Tech, need her as a bridge, a way of overcoming ethnocentric fear.

Further, Liza's return to the Eko community undermines a crucial part of their society. Because of the information she shares with the Ekoes on her return--that the black snow is a Tech product, not a spirit curse, that the Mouth of Paija is a ring around the planet, that the Techs have the ability to destroy the ring, and, most of all, that the Techs are humans and not spirits--she contradicts significant portions of their spiritual beliefs and oral tradition. The sharing of this information is, of course, crucial to the Ekoes' survival and is not intentionally a politically subversive act. What is more, we can assume that the oral tradition itself continues to thrive, given the stories Liza later tells her own children. In contradicting spiritual beliefs and oral tradition, however, Liza significantly changes Eko culture, as she has significantly changed Tech society. Liza's actions, then, bring both societies closer to Hughes's ideal holistic (implicitly pastoral) relationship with nature. The Tech society grows closer to nature, and the Eko society, in becoming more scientifically educated, removes itself slightly from fully embodying nature, and steps closer to a point where it can help, nurture, and protect nature.

Jody also returns to his society to help heal it, just as he helped to heal the planet. His life would undoubtedly be more peaceful if he chose not to return and built a home for himself in the lower mountains, where he could breathe comfortably after a few months of adaptation, and where he could communicate with Olwen and Guardian for company. His choice of returning to the society that exiled him is not an act of submission but one of political subversion. Guardian explicitly directs him not to accept President London's "'lies and deception'" (127) but to resist the Colony's stasis and to continue his own mental growth, to invent necessary tools, and to teach others his knowledge (139), thus slowly undermining the structures. Jody's subversion is not aggressive, as Liza's is; it is quiet and subtle, not unlike Tomi's subversion of ArcOne. Meanwhile, Jody waits patiently for the time he will "lead his people out of their narrow Valley and show them the rest of their new world" (140). Again, the end of the protagonist's journey to self-fulfillment and his attainment of a holistic relationship with nature inevitably begins society's journey to harmony with nature.

This final element of Hughes's pattern, the call for subversive action, sets Monica Hughes apart from many other children's writers. The main plot device in these novels, the circular journey, is a common one. Jon C. Stott, in "Jean George's Arctic Pastoral," labels "withdrawal of the central character from the urban world to the rural one, and his inevitable return to the urban world" as "the central action of the pastoral" (132). Indeed, in addition to the inclination towards a pastoral nature, Hughes's novels contain many of the elements Stott attributes to children's pastoral literature.[24] But Stott goes on to note that "the dominant tone of the pastoral is elegiac, a lament for the passing of a purer, simpler, more harmonious way of life" (138). Hughes's novels, however, offer not a lament for a passing way of life, but a call for action, a manifesto, to resist the passing of a harmonious way of life, to change that which is not acceptable.[25] Hughes insists that

> . . . we *are* in charge of our destiny even though it may not always seem so. Not totally, but there is always something that you can do and sitting down and despairing is not a useful way to go. That is definitely one of the messages I like to get across. (Jones, "Technological Pastoralist" 12)

Hughes's resistance to submissive fatalism sets her further apart from the writers Nodelman discusses in "Out There in Children's Science Fiction: Forward into the Past." Hughes's novels demonstrate many of the characteristics Nodelman describes.[26] But Nodelman criticizes the writers of children's SF for producing adventure stories that ultimately promote conformity. The books "reveal a surprising attack on self-reliance underlying the apparent praise for that quality" (291). What they finally recommend is a repression of self because the characters repeatedly learn the inadequacy of adventure. Like Dorothy, in L. Frank Baum's *Wizard of Oz*, for instance, they learn that home is best after all. Hughes, on the other hand, genuinely admires and even promotes self-reliance. As I earlier noted, each of the protagonists discussed in this chapter at some point demonstrates extraordinary resolve that is crucial to her or his survival. Further, each protagonist returns to his or her original society, not to repress the self and to accept the society as it is, but to change the society, slowly and subversively. Hughes challenges her young readers to reject the flaws of the society in which they live and to correct them. In the words of Rowan, in Devil On My Back, "You are the centre of wherever you are. . . And you are doing. You are not being done to. You have to tell yourself that" (105). The inadequacy lies not in adventure, as it does in the novels of which Nodelman speaks, but in the overly ordered society that, through its excessive internal structure and polarization from nature, prevents individual self-fulfillment and genuine community.

Hughes's version of the circular journey, then, suggests a number of things. It suggests that polarization from nature and suppression of individuality results in dystopia. It also suggests that technology and nature are not diametrically opposed; instead, technology can enhance the human-nature relationship. Further, self-fulfillment and true community are never achieved outside of nature; implicitly, harmony with nature is a prerequisite for both qualities. In Hughes's novels, a natural, pastoral way of life is not a thing of the past but something to work towards. And finally, humans should seek not only to live in harmony with nature, but to develop an active, holistic relationship with it, however elusive and impossible that ideal may be on this planet, because it is only by working towards this relationship that they can benefit both themselves and their environment.

Notes

1. Throughout Banff and Jasper National Parks, for instance, signs remind people to "Leave No Trace."

2. Hughes's most literal example of this holistic bond is in The Crystal Drop (1992). The pastoral community to which Megan and Ian journey nurtures the earth and helps it rejuvenate. They "'gentled the soil and healed some of Earth's wounds'" (172). In turn, the earth allows them to live and grow physically, "'repaying us with crops enough to live on'" (172). The novels I explore in this chapter portray a more symbolic growth in the protagonists because of their bond with nature.

3. The name "Eko," as Adrienne E. Kertzer suggests in "Setting, Self, and the Feminine Other in Monica Hughes's Adolescent Fiction," is reminiscent both of "Eskimo" and "ecology" (23).

4. Ironically, each of the dystopic societies was originally created for utopic purposes, to prevent the ultimate polarization of society and nature. In Devil on My Back, Arc One was created to preserve humans and their knowledge through the Age of Confusion, a time when food and fuel shortages and rampant disease provoked people to riot, loot, and destroy what they could in an effort to find food and safety. The Arc, well-stocked with seeds and agricultural tools, was to be a temporary haven for the human race, protecting it until it could be safely reunited with nature. The City in Ring-Rise, Ring-Set was created so that scientists could efficiently search for a way to destroy the ring of sun-blocking comet dust, and, thus, prevent an Ice Age from consuming the planet and all life on it. Their efforts to protect Earth from becoming uninhabitable are attempts to prevent the ultimate polarization of humanity and nature. Finally, in The Guardian of Isis, the Isis Colony was founded to escape the shortages and crowding on the overpopulated Earth. Eighty settlers came to Isis in an attempt to restore humanity to nature, albeit a different nature on a different planet. Their hope was that they would not repeat on Isis the mistakes they made on Earth.

The civilization in each novel, however, became set in its routines and neglected the pursuit of a harmonious relationship with nature. This neglect hardened sensitivities, leading to the rigid, discriminatory caste system within each society.

5. To be even considered for scientific work, women require grades upwards of ninety percent (10), but men participate in science expeditions regardless of grades (12).

6. Yi-Fu Tuan claims that "Myths flourish in the absence of precise knowledge" (Space and Place 85). I explore this concept further in Chapter Three.

7. According to Rosenhan and Seligman, Abraham Maslow's hierarchy of needs describes human needs in terms of a pyramid. Basic physiological needs are at the bottom of the heirarchy, followed consecutively by needs for physical and psychological safety, belongingness and love, esteem, aesthetic and cognitive satisfaction, and, finally, self-actualization. The needs of each level must be met before one can address the needs of the next level. Only the self-actualized person can concentrate on the needs of others rather than self. See also John A. Glover and Roger H. Burning's 1987 work, Educational Psychology: Principles and Applications (311-316).

8. Liza's determination to "show those men just how useful she could be," while it shows her desire for recognition, also reveals her feminist agenda.

9. The ability of nature to heal and to soothe its inhabitants is discussed further in Chapter Two, Note 6.

10. When Stargazer, formerly slave Six-Hundred-Ninety-Two, leaves ArcOne through the garbage chute, his river experience is a baptismal, rebirth experience. For Tomi, however, the river ride merely marks the beginning of his journey into the wilderness.

11. Hughes's novels Sandwriter (1985) and The Promise (1989) deal extensively with the profound, sacred nature of desert wilderness. She also speaks of this profundity in her 1986 interview with Raymond E. Jones, "The Technological Pastoralist."

12. This situation is a problem with which Hughes deals insufficiently. Although ArcOne contains a vast hold of agricultural and building tools, the supply is not inexhaustible. When the entire ArcOne civilization moves outside at the end of The Dream Catcher (the sequel to Devil on My Back), it is only a matter of time before they inevitably encounter the same problem: their metal tools will eventually wear out, and they will have no ore to forge replacements. This problem could have been avoided if the ex-slave community had created its own non-metal tools and had begun a new type of technology that did not depend on ores and minerals that no longer existed.

13. Although their lack of sophisticated tools and sterile living conditions suggest to the Techs that the Ekoes are a primitive culture, it can be argued that the Ekoes are in fact the more evolved of the two societies. Their evolution, however, is not a technological one. Because of

their nomadic life, their tools are simple and few: the fewer material possessions they have, the fewer they must transport across the barren land. Instead, they have evolved to meet the demands of the harsh climate. The Eko qualities that seem akin to those in animals are part of a remarkable Eko ability to survive, even to thrive, under seemingly intolerable conditions. They live in sub-zero temperatures and their only shelters are tents and snow houses. Eko fur clothing is far warmer and better suited to outdoor life than are the modern Tech parkas and snowsuits. Indeed they are more suited to Arctic life than are the Techs who have no end of instruments and maps to aid them. Hughes emphasizes their evolution when Namoonie, an Eko man, outsmarts a large number of Techs who search for him: "Namoonie had beaten the City. He was smarter than all the Techs put together" (102).

14. It is unlikely that Liza (and similarly, Tomi, in Devil on My Back), a vegetarian all her life, can eat red meat without ill effect. If a human does not eat red meat for an extended period, the body stops producing the enzyme that digests it. Thus, when red meat is reintroduced into the system, the body usually rejects it until it again produces the necessary digestive enzyme.

15. In Jones's interview "The Technological Pastoralist," Monica Hughes discusses briefly her understanding that indigenous peoples are often "in touch with a belief that all life is a gift" (9) and that that belief permeates their entire society, encouraging them to develop harmonious relationships with nature.

16. Jody's rescuing of nature is quite accidental. He frees the river in order to save his people, and simultaneously he returns a great deal of Isis to its earlier green state. Nevertheless, his holistic relationship with nature is evident in the action itself, as well as the exhuberance and relief he feels when he learns that he has healed a wounded nature: "The air began to smell fresh and sweet again. Jody clapped his hands. "'We did it'" (137).

17. Welwyn Wilton Katz, in "The Heights are Glorious, But Not for the Faint-Hearted," shows this to be a dominant theme in each of the Isis novels. Raymond E. Jones, in "'True Myth': Female Archetypes in Monica Hughes's The Keeper of the Isis Light" also discusses the symbolic significance of the Isis geography.

Mountains are of great spiritual significance in the Bible as well, and, indeed, throughout English literature: see "Mountain" in A Dictionary of Biblical Tradition in English Literature, ed. David Lyle Jeffrey (522-3). For a more general discussion, see Yi-Fu Tuan's 1974 work, Topophilia (70-74), which traces the changes in environmental attitudes towards mountains from the ancient through to modern times.

18. The name "Lionkiller" not only reflects Jody's heroism, but it indicates his increased knowledge. For most of the colonists, "Lionkiller" has no meaning, for they do not know what a lion is, nor do they understand the significance of such a name. Jody, however, understands both the heroic significance of the name, as well as its historic connections to his ancestors in the grasslands of East Africa.

19. Tomi's new-found proximity to nature induces immediate changes in him the moment he exits the Dome. Earlier, he was sharp and rude to the family slave. Now, although she participated in the revolt that forced his exit from ArcOne, he shows neither anger nor bitterness towards Seventy-Three. In fact, he is actually grateful to her: "I must remember to thank Seventy-Three for saving my life, he thought" (40). Tomi's situation also forces the emergence of independent thought. When he is on the island, searching for a way to return to mainland, his infopaks provide him with only minimal information. In order to build his raft and reach food and safety, Tomi must creatively extrapolate from the infopak data. These changes are small in comparison to the greater changes he later experiences, but they further support the argument that, in these novels, nature plays a crucial role in human self-actualization.

20. Ironically, Tomi must follow the orders of the ex-slaves in order to become independent.

21. Hughes also subtly criticizes the Ekoes in Liza's conclusion of the necessity of academic pursuits.

> How could she tell Namoonie that existing from one caribou hunt to the next, always on the move, one's whole energy taken up in living and eating, that Man could not advance that way? There had to be time over for asking questions about the universe, for trying to find answers. . . (115).

Tomi, in Devil on My Back, comes to a similar conclusion:

> Only it did take a lot of work just to survive in this paradise. If things could only be a bit easier, there'd be time for other things: for making, exploring, discovering. . . (132).

These submerged criticisms of the less technological communities further supports the argument that of the three wilderness communities, Olwen and Guardian are the most ideal.

22. That Liza's journey into the wilderness lasts nine months, the length of human gestation, emphasizes further her rebirth experience.

23. That the Ekoes "bend to Nature and learn her ways," suggests that they see Nature as Other, to whom they must bend, rather than seeing themselves as part of nature. But the context of the quote suggests otherwise. It is not spoken by an Eko describing his or her way of life, but by Liza who is explaining to the Ekoes the differences between Tech and Eko life. She refers to nature as Other because she is speaking as a Tech ("'We, the Techs. . .'" [120]), and the Techs see nature only as Other.

24. Like the writers Stott describes, Hughes is concerned with "how the experiences in the ideal land influence the character on his return to the actual world" (132). In Hughes's protagonists, the chief motive for withdrawal is a "sense of dissatisfaction with the actual world" (132). The experiences her protagonists have outside civilization "are crucial in the formation of attitudes [they] will take back with them" (132). And, on their journeys, the protagonists "engage in self-analysis and return to the outer world in harmony with [themselves]" (132).

25. Hughes has written two pastoral works, which include in them an elegiac tone for a passing way of life. The Refuge (1989) is patterned closely after Frances Hodgson Burnett's famous pastoral novel, The Secret Garden (1911). Gwyneth Evans's article, "The Girl in the Garden: Variations on a Feminist Pastoral," discusses the pastoral aspect of Refuge, as does Jo-Ann Wallace's review "Secret Gardens, Industrial Parks." Hughes's 1993 picture book, A Handful of Seeds, is also a work of pastoral literature.

26. Hughes's novels, like the novels Nodelman describes, "begin in closed cities and describe how their protagonists move out into a larger world outside" (285). They "deal significantly with ideas of constriction and freedom by representing them with closed environments and the open spaces outside them" (285). "Breaking out of a closed city" in Hughes's novels does indeed "stand as a metaphor for growing up and leaving the protected world of childhood" (285). And, the communities the protagonists discover outside are following a lifestyle of the past. The experience is, in many ways, a "reentry into time, into the knowledge that things were once different and could be different again" (288).

Chapter Two

The Journey into Nature

In the previous chapter, I established, through an analysis of the circular journey plot pattern, that Monica Hughes envisions an ideal relationship between humans and nature. This relationship is holistic; each party benefits from the bond with the other party, so that nature and humanity together make a whole greater than the sum of its parts. Further, the relationship is active and participatory; humans enter into nature's community of life and use natural resources as they need them. In the novels discussed in Chapter One, the protagonists hunt animals for food and clothing, and use other natural resources--trees, for instance--as necessary. Clearly, Hughes intends for humans to participate in the balance of nature and not to be isolated from it. On the other hand, however, Hughes shows that nature and its resources are incalculably precious. The novels I examine in this chapter clearly show that an active, participatory relationship gives humans no leave to exploit nature. Of course, prudent use of resources is implicit in a holistic relationship: if either party suffers because of the relationship, it is not holistic. The holistic and participatory relationship is central to Hughes's novels that deal with nature, but Hughes demonstrates a more specific environmental agenda in two complementary themes that frequently arise in her science fiction. She shows, first, that the abuse of nature is not utilitarian, and second, that it is not moral. Hughes's moralism, which in these novels takes on both religious and social dimensions, effectively delivers an ecological message. Unfortunately, the novels sacrifice the exquisite artistry of her other novels for the sake of ecological indoctrination.

To study the utilitarian and moral themes, I will examine two of Hughes's recent novels, The Crystal Drop (1992) and The Golden Aquarians (1994). These novels are particularly appropriate for a number of reasons. Of all Hughes's novels with environmental themes, these two are the most ideologically overt: they most clearly express her outrage at the abuse of nature. Since they are science fiction novels, they allow Hughes to comment on the present environmental situation by projecting possible future results of current actions and attitudes. Further, these novels project different stages of environmental abuse. The Golden Aquarians takes place on a distant, essentially undamaged planet, where the protagonist tries to prevent ecological trauma. In The Crystal Drop, however, the Western Canadian land has already sustained extensive damage, and the protagonists journey to a place where they can begin to repair that damage. Because the same themes appear in both novels, these extreme stages of environmental abuse demonstrate that Hughes implicitly promotes prevention of environmental trauma. But when nature is severely damaged, as it is in The Crystal Drop, Hughes also urges her readers to maintain hope, to repair that which can be repaired, and to avoid furthering the ecological damage; in Hughes's novels, that is, it is never too late for positive action.[1]

As they did in Chapter One, the protagonists' journeys illustrate the pertinent themes. In both novels, the protagonists journey into nature where, through various means, they receive an education in their practical and moral responsibilities towards nature. These two journeys do not, however, follow the same plot pattern. Walter Elliot's journey, in The Golden Aquarians, is a circular one. But unlike the circular journeys discussed in Chapter One, this journey is not from and back to a dystopia. On the contrary, Walter lives in Lethbridge, Alberta, with his Aunt Gloria, and his home is, in every sense, a good place. His father, Colonel Angus Elliot, is a "hardbitten terraformer" (57) who alters planets' soils, vegetations, climates, and geographies, making them suitable either for human colonization or for the agriculture and raw materials humans require (37). He summons Walter to Aqua, his current planet-project, to make "*a man*" out of Walter (5). In an effort to adjust to the difficult life of a terraformer, Walter explores Aqua and soon discovers an intelligent, telepathic, amphibian species, the Aquarians. Aqua, then, is also a good place, but it is not a center of established human values, as Tuan's definition of "place" suggests, but the center of established Aquarian values. The Federation for which Col. Elliot works forbids the terraforming of planets inhabited by intelligent life, but Walter knows that when his father "'puts his hand to terraforming a planet, that planet bends to his will. Nothing, absolutely *nothing*, gets in the way'" (34). Nevertheless, Walter defends the Aquarians and makes every effort to persuade the humans to evacuate the planet. The evacuation becomes still more imperative when Walter learns from the Aquarians that a massive tidal wave that washes across Aqua every twenty years--a wave upon which the Aquarians depend for reproduction--is due in six days. Despite considerable physical and mental resistance from his father, Walter sets in motion a chain of events that leads to the evacuation of Aqua. During the final moments of orbit around Aqua, Col. Elliot, who refused to leave the planet, is projected onto the spaceship by Aquarians, physically unharmed, but with no memory of his life as a terraformer. Walter and his father return to Lethbridge, where Walter must coach his father, now his friend, through the painful restoration of his memory. While Walter's journey does not end with subversion of the structures of his own home, as do the circular journeys discussed in Chapter One, it does include subversion of the dystopic structures his father promotes. Walter, then, proves that Aqua is a suitable home for Aquarians, but not for humans, affirms the suitability of his own home, and makes it a home for his father as well.

In The Crystal Drop, Megan Dougal and her younger brother, Ian, must also leave their home, but, unlike Walter, they cannot return, for their journey is linear; it is a quest for a new home, a new, felicitous place. Their Southern Alberta home, once a thriving poultry farm, is now in the midst of a vast desert and the family well barely yields enough water for their survival. Although familiarity and established family values define the farm as "place," the lack of survival essentials--food and water--prevent it from being a good place. Indeed, since they are likely to starve there, the farm has become a form of chaotic space. When their mother dies in childbirth, Megan and Ian journey across the desertified prairie, which to them is an even wilder space than their farm had been, eating gophers and weeds. They meet survivalists, who hoard their water and protect it with guns and dogs, as well as Peigan teens and an elderly couple, who teach Megan and Ian that the devastation is the result of poor farming practices. Eventually, Megan and Ian reach Gaia, a small environmentalist community in the Rocky mountains, where their Uncle Greg lives. After eleven years of work, the Gaia members have restored enough land to raise small crops for their survival. Megan and Ian join the community, learn to nurture the traumatized land, and help to make their new home a suitable, felicitous place.

Despite the different journey patterns, the themes of practical and moral responsibility to the land are clear in both novels, and the protagonists learn similar lessons. In The Golden Aquarians, the first theme--the utilitarian necessity of respect for the land--initially emerges in the aesthetically vulgar nature of the abused terrain. Aesthetic concerns are seldom an aspect of utilitarianism; Webster's New World dictionary defines utilitarian as stressing usefulness over beauty. Nevertheless, Hughes's novels show that aestheticism becomes a utilitarian concern when lack of beauty inhibits usefulness.[2] In The Golden Aquarians, the terraforming is meant eventually to enhance human life, but instead, it inflicts immediate physical and emotional distress. South of the workers' compound, "where the engineers hadn't yet started work, Aqua looked clean and peaceful" (23). But when Walter looks upon the terraformed land, it disturbs him to the extent that he suffers physically:

> To the North, the land was like a sore, the kind of sore that doesn't heal properly. It made him feel angry and sick, and he turned his back on it. . . . (24)

Although Walter's reaction to the appearance of damaged land is not always physical, the loaded, descriptive language betrays his emotional distress at the sight: machines "gouging" the land (22, 78) leave "scars" and "wounds" (157). The smells of wounded nature, of the "stench of burning snails" (70), are equally "sickening" (70), especially when compared to the "medicinal" (76) and "magical" (44) smells of the pristine portions of Aqua.

All humans, however, are not physically and emotionally sickened at the abuse of nature. Indeed, Col. Elliot seems to thrive on it: "'I tell you, son, there's no job in the galaxy like terraforming'" (12). Nevertheless, in Hughes's novels, even the abusers of nature eventually lose: their exploitive actions cripple nature so that it can no longer be an economic resource. Two planets Col. Elliot was "most proud of conquering" (118) were altered to such an extent that they could not maintain ecological integrity and, thus, could not perform the services for which they were altered; the humans who terraformed the planets in order to exploit them were eventually forced to abandon them, incurring enormous economic expenses (118). The name of one of the abandoned planets, Prometheus, highlights this irony.[3] In Greek mythology, Prometheus was the Titan who stole fire from the gods for the benefit of humankind. Col. Elliot similarly claims the power of the gods when he reshapes planets for the benefit of humankind. Indeed, his own son "used to imagine him, a bit like God" (1). In the Greek myth, however, Prometheus, whose name means forethought or foresight, sacrifices himself for the lesser humans. These humans keep the fire for their own use, and because of it, they survive and evolve. But in Elliot's case, his power over the planets renders them useless. Rather than exercising foresight and sacrifice, the qualities that would truly make him godlike, Elliot envisions only immediate conquest.

In *A Sand County Almanac* (1970), Aldo Leopold suggests that, since one can never fully understand nature or even a single ecosystem, one can never completely control or manage it. Consequently, "the conqueror role is eventually self-defeating" (240).[4] Aqua is a graphic example of the self-defeating nature of land (or planet) conquest because of limited understanding. Despite intensive study of Aqua, the Federation is ignorant of many key elements in the Aqua ecosystems. The workers know nothing of the existence of the Aquarians; their anthropocentric idea of intelligence prevents recognition of the Aquarians, whose life and intelligence are of an entirely different kind than those of humans. The workers' self-oriented vision is, in fact, a blindness to things outside themselves, in this case, to what is in nature. Consequently, they are shocked at the sudden climate change and the energy flashes shortly before the tidal wave.[5] Without the Aquarians' warning, the humans' ignorance would lead to certain death: they would be killed by the planet's purging tidal wave, for despite their self-proclaimed right to the planet and its resources (9), humans do not belong on Aqua.

Finally, abuse of nature is anti-utilitarian in *The Golden Aquarians* because of the inevitable loss of community. As I noted in the previous chapter, Monica Hughes presents harmony with nature as a prerequisite for development of true community. The Domes in *Ring-Rise, Ring-Set*, *Devil On My Back*, and *The Dream Catcher* literally separate the citizens from nature, but Col. Elliot's abuse of nature--which indicates a profound alienation from it--similarly prevents him from living in harmony with nature. Thus, his abuse also thwarts any true community he might experience. The Colonel is an isolated man. He admits that his employees resent him: "'my crews. . . hate my guts'" (17). His sister never speaks of him by name (2). Even his relationship with his son--a relationship that he comes to appreciate and desire--is strained at best. His alienation from others is further evident in his belief that his employees' resentment is an asset: "'I get more out of them my way'" (18). In the end, however, the Colonel's heavy-handed approach backfires: when he insists that the terraformers stay on the planet, he finds no support among his mutinous employees.

The anti-utilitarian nature of environmental abuse is also a prominent theme in The Crystal Drop. The overfarming of the land, initially a utilitarian practice, becomes the opposite. Instead of helping and feeding people, it harms them socially, physically, and spiritually. Since Megan has only vague memories of the land before it was devastated, she is not physically sickened by sights and smells of damaged nature as is Walter; she has little to which she can compare it. But she and Ian are significantly affected by their ancestors' abuse of the land. Just as the compromised integrity of the environment forced humans to leave Elliot's terraformed planets, the appalling ecological condition of Southern Alberta forces most people to abandon the region. The institutions that help create a valid community depart with the people. The post office is gone, so the Dougals receive no mail. The children have no school to attend and no friends with whom to play. Even their family is broken when their father leaves. Further, when Megan's mother has a difficult childbirth, only Megan is there to assist her. Megan's medical knowledge is limited, and consequently, her mother and the infant die.

In addition to their social deficits, Ian and Megan suffer physically as well: before they reach Mitch and Sadie's, they usually eat a single, meagre meal each day and are, therefore, undernourished. Daily, they struggle for survival, scrounging for food and water, competing with hawks and coyotes for essentials of life. Even the intense heat wounds them:

> The sun glared white on the concrete pathway. Megan could feel her pupils contract, her eyes water, her skin sting and tighten. The heat was like a blow from a flat-iron. (53)

Ernest Partridge, in "Nature as a Moral Resource," states that "a destruction of the natural environment diminishes man's legacy and estate by depriving him of places of refuge, fulfillment, 're-creation'" (110). Refuge and fulfillment are not usually associated with utilitarianism. But since Hughes implies that self must be fulfilled before one can focus on the problems of the larger population (an idea I discussed in Chapter One), spiritual fulfillment becomes a utilitarian concern. Megan and Ian, in their journey into nature, receive none of the refuge and spiritual refreshment that, for instance, nature offers Jody in The Guardian of Isis. The places in nature that should provide them with refuge are, instead, perversely ominous. The Oldman River, for example, takes on the sinister "wriggling shape" of "a green snake flung across the sandy land" (141). Its water is not fresh and cold, but "warm. Slow moving" (144). Even the fish in the river contribute to the snake image--they are filled with wriggling worms--and give the children no nourishment (143). Soon after they cross the Oldman, the children come to a still more ominous, perverse river: "'A river of sand instead of water,'" quicksand that offers no refuge or water or comfort, but that almost devours Ian (145). Indeed, in the seventy-five kilometre journey, Megan and Ian find only one place of genuine refuge--the home of Mitch and Sadie--and even there refuge is limited; in order to nurse Megan back to health and fill Ian's "'hollow leg'" (125), Mitch and Sadie must feed them from their winter stores, placing their own lives in jeopardy.

On their journey west, Megan and Ian meet people for whom community is impossible because of their strained relationship with nature. Like Col. Elliot, the two groups of survivalists claim nature (and its water) as theirs to exploit and hoard: "'The land is ours. . . . Our signs are up, saying this is our place. No one goes by. *No* one'"

(79). And, like the Colonel, they clearly believe that community is to their disadvantage: they approach other humans--even children--with guns and dogs. When contrasted with the warm communities and with the holistic relationships with nature that Sadie and Mitch and the Gaia colony enjoy, the survivalists' alienation is even more pronounced. Their isolation might even be a danger to them; if they ever require help, they are unlikely to receive it.[6]

Clearly, Hughes believes that the anti-utilitarian result of environmental abuse is a reason to strive to prevent the abuse. But, as Kohák notes in The Embers and the Stars,

> The reason why humans ought not to devastate their world is not simply utilitarian. . . . More deeply, it is *moral*: to destroy heedlessly, to pluck and discard, to have and leave unused, is an act of profound disrespect to the eternal worth of nature. (72)

Kohák also notes that, in contemporary use, the word "moral" is frequently trivialized to indicate "little more than a conformity to a set of social conventions or mores" (70). Kohák qualifies his own use of the term and defines a moral act as "a free act, governed by the vision of an ideal" (70). The theme of the moral necessity of respect for nature, as demonstrated in Hughes's novels, relies on the latter definition of "moral."

In both The Golden Aquarians and The Crystal Drop, the protagonists perform free acts of environmental conservation that are governed by an ideal that insists that nature has intrinsic value beyond its utilitarian value.[7] In The Crystal Drop, Megan learns from Mike Spotted Eagle the essential balance and goodness of unexploited nature. Mike explains that balance is a primary characteristic of nature, or in his terms, of the realm of Napi, the Peigan god:

> "Sure, some good years, some bad. Grass fires. But behind the grass new growth and then more buffalo and deer. Plenty meat and hide. Berries and roots enough for the people and nothing Napi gave us ever wasted." (48)

From the plaques at Head-Smashed-In Buffalo Jump, Megan learns of the indigenous way of life that successfully maintained nature's balance. In addition, she learns that unabused nature had the capacity to maintain its abundance and balance for a time period so extensive that it trivializes the greatest human achievements:

> "Nine hundred years ago Norse sailors landed in Newfoundland . . . . Forty-five hundred years ago Stonehenge was constructed . . . . Five thousand years ago the Great Pyramid was built. Fifty-five hundred years ago was the first known use of the Head-Smashed-In Buffalo Jump." (38)

This new knowledge, that buffaloes ran on the prairies in abundance for millennia, alerts Megan to the intrinsic value of nature and compels her to make a moral commitment to restoring the land. Her knowledge, from her lesson in aboriginal culture, that prolonged use of natural resources is possible when nature is respected, further fuels her moral commitment. Of course, Megan and Ian journey to the Gaia community out of necessity--they have no other place to go. But when she explains their destination to Mike, it is not food or shelter she seeks, but an opportunity to restore the land, to fulfill a moral obligation:

> "Now, we're going upriver to Lundbreck. . . . Ian and me, we're going to settle there. With our uncle. Make things work and grow. Maybe bring Napi back--*our* way." (50)

Similarly, when Walter, in The Golden Aquarians, learns the intrinsic value of unabused nature, he makes a moral decision to defend it. Unlike Megan, Walter has the advantage of witnessing first-hand the qualities of a healthy nature. From his own explorations, he learns of nature's beauty--the glowing embryos on the cave ceiling, for instance--as well as the "wonderful sense of peace" it offers (83). From Greenie, he learns of the remarkable life cycle of the telepathic Aquarians, of their exclusive connection to Aqua's water and tidal system, and of the unique tidal washing of Aqua, a key component of the planet's balance. Based on his own observations of nature and his sympathy for the Aquarians, Walter makes a moral decision:

> . . . [He] realized that there was only one brave deed that was worth doing, and that was to stand up for the inhabitants of Aqua and stop his father going ahead with the project. (100)

Only after he makes this decision does Walter learn that lives are in jeopardy (106). Although it takes some time for Walter to develop the courage (and the strategy) to carry through his convictions, his original reason for evacuating Aqua is a moral decision.

Implicit in the theme of the moral necessity of environmental respect is action. The protagonists' moral decisions are not simply private beliefs of right and wrong, but convictions that demand proactive responses. This is yet another example of Hughes's resistance to fatalism, of her insistence that it is never too late for action. Further, her presentation of the theme demands a universal response. She does not exempt those who have not abused nature from a moral responsibility to help nature to recover from damage inflicted by others. In her novels, the protagonists' moral decisions are not conscience-stricken qualms of remorse. The protagonists have not actively contributed to the abuse of nature; they have nothing over which to feel remorse. Nevertheless, because of nature's intrinsic value, they have a moral obligation to prevent or repair damage that other humans inflict on nature.

Hughes's moral convictions towards nature emerge from her own religious beliefs.[8] Her constantly recurring call for action is rooted in an underlying optimism that assumes that action is not futile. In her interview with Raymond E. Jones, Hughes explains her optimism as the result of

> A belief that God's not going to let us go down the tube without a fair shake at getting ourselves back. I mean we have free will, which unfortunately has got us into a lot of problems. But I still believe that, over all, pattern will emerge out of chaos." ("Technological Pastoralist 13)

In both The Golden Aquarians and The Crystal Drop, Hughes complements the theme of the moral necessity of environmental respect with strong religious motifs.

Indeed, the journeys into nature are, for both Walter and Megan, religious journeys. At the outset of The Golden Aquarians, Col. Elliot is like a god to Walter, "rolling up pieces of clay into worlds and spinning them out into the galaxy" (1). His hands remind Walter "of the way a potter works with clay" (151). In both the Old and New Testaments, a potter shaping clay is a metaphor for God (Isiaih 29:16, 64:8; Jeremiah 18:6; Romans 9:21).[9] Gradually, however, Col. Elliot becomes a monster to Walter, and his hands remind Walter of "the claws of a wild beast" (151). Having felt only anxiety and inadequacy in the presence of his father, Walter finds true spirituality in the Aquarian underground cave. Its "vaulted roof" (83) and its "pillars and stone draperies" (82) remind him of "being in the choir loft of a cathedral" (81). He even hears the telepathic "music" of the Aquarians (47). And in this private "cathedral" (45), Walter experiences "a wonderful sense of peace" (83). His descent into the cave is a symbolic descent into his own subconscious, and his sleep in the caves is a symbolic state of death. When he emerges, naked, he is symbolically reborn, into a new and higher consciousness in which he can recognize the value and intelligence of the Aquarians, something the terraformers are unable to do. Furthermore, the true spirituality and subsequent moral superiority of the Aquarians, who not only forgive Col. Elliot but also save his life, inspire Walt to forgive his father:

> "The Aquarians didn't punish him. . . . And they have a lot more to forgive than I have. It's like . . . well, I guess the difference between justice and mercy. No contest, really." (168)

Megan and Ian's journey across the Alberta desert is a religious journey loosely patterned after the physical and spiritual journey of the Israelites from Egypt across the Shur, Zin, and Sinai deserts to Canaan, the promised land. Like the Israelites, Megan and Ian undertake the journey because of plagues. Egypt's water turned to blood; Dougals' well-water turns alkaline. The Egyptians suffered a plague of locusts; grasshoppers on the Dougal farm ate much of the remaining greenery. A plague of death, which took the firstborn of each Egyptian family, persuaded the Pharaoh to send the Israelites on their way; the children's mother and infant brother die, forcing Megan and Ian to leave the farm and journey to Gaia. Like the grumbling Israelites, Ian frequently complains to Megan for water and food. While the Israelites were bitten by snakes in the desert, Ian is bitten by an angry dog and Megan is "bitten" by a bullet. Gaia is a "promised land" to Megan and Ian; at any rate, Megan frequently promises Ian that they will reach Gaia, that it will have water, food, and shelter, and that Uncle Greg will be there. The crystal drop around her neck is the promise of water at Gaia that drives Megan on. Finally, although the Israelites' journey was unexpectedly and greatly prolonged, they did eventually reach Canaan; similarly, Megan and Ian's journey is prolonged, but they do reach Gaia.

As Walter did, Megan and Ian discover on their journey the difference between false and genuine religion. Head-Smashed-In Buffalo Jump is a shrine to Napi, "'the mythic creator of the Blackfoot people'" (46). Megan notices that the building is "more like a church than a house" (46). Mike is like a priest to Napi, demanding that Megan revere the stuffed animals, who have "Buffalo spirit in those bodies" (34). The teens kill the dog Charlie for food, but symbolically Charlie becomes a sacrifice to Napi. Indeed, Megan almost becomes a human sacrifice in Mike's effort to make her atone for her ancestors' sins. But a tension between words and action exists in the teens' religion: when Mike insists that their electricity comes from the Sun God, Dick reminds Mike that "'It was me fixed the little wires made it work again, man'" (43). For Hughes, Mike's religion is flawed because it demands none of the positive action fundamental to Hughes's moral and religious beliefs. When Megan asks what Mike will do to remedy the environmental situation, he replies, "'I'm gonna make Napi's world again. Pray him back with sweetgrass'" (50). Religious ritual action, if unaccompanied by practical measures, is simply self-indulgent foolishness and has no intrinsic value in Hughes's novels. Hughes further criticizes the solely ceremonial religion by portraying its High Priest, Mike Spotted Eagle, as a lunatic obsessed with revenge rather than as a wise, forgiving, religious man.

Conversely, Mitch and Sadie's religion is a religion of practice. Mitch and Sadie use religious language--they speak of good Samaritans (120) and the mark of Cain (123), for instance--but they accompany that language with actions that nurture the soil and conserve water (127-28). Mitch explains their attitude:

> "The secret's you've got to learn to take only what you need from the land and give back what it's given you. Respect. That's all. That's what you've got to have for the land. Respect." (122)

Similarly, Gaia's religion is both one of language--they thank "Almighty God for the bountiful harvest" (175)--and of practice. As one of the colonists says:

> "We've worked desperate hard . . . We've gentled the soil and healed some of Earth's wounds. Now she's repaying us with crops enough to live on. But that's because we stay small. We don't crowd the land or pollute the water or wear out the soil." (172)

Gaia even debates an evangelistic mandate to "'move out and teach other groups'" (176).

A key element of Hughes's moral attitude towards nature is her social agenda; she insists that, despite current social practice, nature is not a commodity and cannot be owned.[10] In The Keeper of the Isis Light, Olwen, in a fit of rage, screams at the settlers, "'You're spoiling Isis. Go away. I don't need you here. . . . Go back to Earth where you belong. Isis is mine. Mine'" (74). But, in the sequel, The Guardian of Isis, she admits to Jody that she never owned Isis, that "'it was never mine. That was only a childish vanity'" (99). In The Crystal Drop, Megan learns that the devastation of Southern Alberta is essentially the result of viewing nature as a commodity to exploit. After fifty-five centuries of balance and abundance, the prairie ecosystem was subjected to a few centuries of being a commodity, "'And then nothing. Our life gone. Taken away. The land measured out in squares. Cut up. Drained. Used'" (54). Hughes uses the "square" metaphor again in The Golden Aquarians, when Col. Elliot explains to Walter that terraforming will "'start with a small square of land . . . Then we'll drain the square next to that. And another'" (12). One can assume that the destroyed planets of Prometheus and Ethos were subjected to a similar, methodical conquest. For Hughes, imposing a rigid square--a necessary part of owning land is determining boundaries--on an entity as unrestricted as nature prevents one from appreciating the entire ecosystem, and furthermore, prevents the larger ecosystem from maintaining its integrity. Devastation is inevitable. Like Olwen, Walter learns, in The Golden Aquarians, that despite his father's resolve to conquer Aqua, the planet cannot belong to him, or, for that matter, to any other human. At the outset, Walter tells himself, *"I'll make Aqua mine"* (21), but as he learns more about the planet, he realizes that he must leave Aqua and return the planet to the Aquarians.

In The Golden Aquarians Hughes cleverly uses a colonialist motif to emphasize the immorality of owning land. The colonial mentality that allowed England to colonize and exploit one quarter of the known world is now generally regarded as immoral, and the colonialists' actions, which destroyed lives and livelihoods of people and ecosystems across the globe, are generally considered reprehensible.[11] In an interview, Hughes speaks of the colonialist values, or rather, the lack thereof:

> We gained an awful lot in the Renaissance, but I also think we lost a lot by centering upon ourselves, upon our achievement, and upon how we could change our environment. We cut ourselves off from the rhythm of the ecosystem, which has been only too plainly shown in all the horrors that have happened . . . . (Jones, "Technological Pastoralist" 8)

Col. Elliot is much like a British colonialist. His descriptions to Walter of former planet-projects are like the boys' adventure tales that glorified the colonial conquest of African jungles: "His father talked, spinning tales of fiery planets, of impenetrable jungles, of carnivorous beasts whose fangs dripped poison" (34). The presence of M'Kossa, the African, is a further reminder of previous colonial conquests in Africa (118). Indeed, Col. Elliot's attitude is that of a colonialist: he insists that, because Earth needs the resources, the other planets are rightfully his to exploit (9). He is determined to conquer anything that stands in his way: "'Either way it's war. Me and my equipment against it'" (37). Even his thoroughly British name suggests the attitude and actions of an imperialist. (I must emphasize that it is not Britain Hughes disdains, but colonialist attitudes and ideology.)

In ancient Israel, refusing to allow the land to be a commodity was part of the religion. No one owned land. The Israelites divided the land according to tribes, and farmed some of it, but the land itself belonged to God--"The earth is the Lord's, and everything in it" (Psalm 24:1)--and the Levite priests regulated its use.[12] But in the current political and economic climate, refusing to see land as a commodity amounts to a renunciation of power. Yi-Fu Tuan, in Man and Nature, states, "The deliberate withholding of power in the interest of a 'land ethos' and against the claims of perceived material benefit is . . . very rare" (9).[13] But however idealistic it may be, Hughes follows the ancient Israeli model and recommends renunciation of power in the interest of nature. By this, I do not mean a renunciation of the quality that motivates positive action, but of the ideology that promotes technocracy. In her interview with Jones, Hughes agrees that, rather than taking life as a gift, "The technocrat takes it as a right . . . . and a challenge" ("Technological Pastoralist" 9). It is this technocratic attitude that Hughes resists.[14] Megan, for instance, learns that soil must not be "broken" (124), but "'gentled'" (172). And Walter realizes that Aqua must not be conquered, but left alone to enjoy its own natural patterns.[15]

In The Crystal Drop, Hughes's moral call for a deliberate renunciation of power over land is most vivid in the criticism of current farming practices. Through Mike Spotted Eagle she condemns use of chemical fertilizers and pesticides, large-scale farming of single crops (wheat), and alteration of ecosystem and soil structures:[16]

> "Tearing up the land for wheat so nothing'd hold it down when the wind came. Draining the good swamp for more land. Moving rivers. Damming them. Chemicals poisoning air and earth and water. . . . Now see what's left. Nothing." (49)

Mitch explains more explicitly how current farming practices deplete the soil:

> "More water for irrigation. More hay. More beets. More cattle. Then you got to have more irrigation. Pretty soon all the fertilizer that's settled in the soil starts to come up to the surface again . . . .
> . . . .
> So then the salt started coming up and pretty soon they couldn't grow wheat any more and they had to turn to barley. Barley'll grow in land that salty, wheat won't tolerate it. But after a while barley wouldn't grow either. And the land dried and the wind blew and today it's nothing but sand." (122-24)

Indeed the land most fertile, and thus most exploited for farming, becomes the most devastated: "*This* is what death looks like" (145). According to Tuan, Hughes's concerns are well-founded. In Man and Nature, Tuan explains that current farming practices--specifically, clean tillage over large fields, substitution of one crop for a complex plant community, demand of single crops on soil nutrients, and breaking of soil structure by large machines--are rapidly desertifying the land (13). He also provides some alarming statistics of the rate at which this devastation is taking place: twenty million acres of arable land disappear irretrievably each year because of careless tillage (13). From the farming communities in Devil on My Back and The Crystal Drop (Gaia), we can assume that Hughes is not disturbed by small-scale farming whose tillage practices are not destructive. Her criticism is directed specifically at large-scale overfarming, whose practices are inevitably destructive. Indeed, through the practices of the Gaia community, one can see what Hughes believes are acceptable farming practices: "'we stay small. We don't crowd the land or pollute the water or wear out the soil'" (172); "'We've had to give up cattle and chemical fertilizers. We burn as little wood as we can and rely on wind and solar power for our needs'" (175). The proposal to "stay small" reflects Hughes's ideal pastoral state of nature, discussed briefly in Chapter One. But simultaneously, it undermines current social ideologies that assume that the pursuit of wealth and resources is a human right, and that assume that land and vegetation belong to the human race.

In The Golden Aquarians, Hughes's moral and social agenda are not only seen in the renunciation of power over land, but also in the renunciation of power over animals. Hughes's sympathy for and interest in animals is a frequent motif in her other writing. For example, in her essay, "My Search for Somewhere," she describes the spiritual effects of an encounter she had with an antelope in Africa:

> I walked, thinking of nothing, drunk on the air, and out of the grass stepped a small antelope. I stopped. It stopped. We looked at each other--I was so close I could have reached out and touched its nose. Then its head came up and it gave a little snort and trotted off and vanished in the grass. I stood still . . . feeling newly made, as if the earth had just given birth to me and

> acknowledged me as its child . . . (21)

In her novels *The Ghost Dance Caper* (1978) and *Log Jam* (1987), she further explores the spiritual value of animals; the characters search for their animal spirit guides as part of a sacred ritual. But in *Space Trap* (1983), Hughes begins in earnest her defense of animal rights. Valerie, the protagonist, is abducted and taken to another planet to be a zoo exhibit. By placing a human in the role usually reserved for animals, Hughes ignites the readers' sympathies for the predicaments of captive animals and raises moral questions about humans' right to take animals captive. Indeed, since animals are part of nature, Hughes shows that they--like the land--must not be commodities. In *The Golden Aquarians* she continues this crusade. She specifically criticizes the capture of orang-outangs, pandas, (77) and dolphins, as well as the use of animals for recreational purposes (95). She sarcastically denounces the slaughter of whales "for important reasons like steaks, margarine, and explosives" (33). Had the whales been killed to provide necessary sustenance for people, Hughes probably would not criticize. In *The Crystal Drop*, buffaloes provided sustenance for fifty-five centuries, a fact Hughes clearly admires. But Hughes sees the uncontrolled slaughter of animals for frivolous reasons as unethical. Through Walter's moral dilemmas in *The Golden Aquarians*, she also challenges the human assumption of superiority over animals. She indirectly criticizes the idea that the opposing thumbs which allow humans to build architectural structures are adequate reason to assume superior intelligence (32, 87). Further, she points out that, even if human intelligence is superior, it does not give humans, who do not need it for sustenance, the right to dissect another life-form simply to further knowledge. Through the challenge of these assumptions, as well as through her obvious sympathy for animals, Hughes clearly disagrees with Col. Elliot when he snorts, "'who cares? A bunch of frogs and fishes. They can always be replaced by more useful imports from another planet. They're not important'" (13). The simple fact that animals are alive and a part of nature is, for Hughes, moral reason enough to respect them and to resist exploiting them. That they may very well be as intelligent as humans makes respect of them a moral imperative. Hughes's criticism, then, is not only directed at those who kill animals needlessly, but at the social ideology that sees luxuries--such as steaks, margarine, and explosives--as necessities and therefore both condones and demands the unethical slaughter of animals. Her criticism, once again, is a deliberate undermining of current ideologies.

Both The Golden Aquarians and The Crystal Drop, through the themes of the moral and utilitarian necessity of respect for nature, effectively deliver an ecological message. Unfortunately, the message takes precedence over artistic subtlety in both novels. In "Perceptions of

Society through Children's Literature," Hughes criticizes some late eighteenth-century and early nineteenth-century works for their

> imposition of adult attitudes and responsibilities on the young, showing the extreme punishment that would follow *social wrongdoing*, and of the heavy-handed way in which these messages were conveyed to the youngsters through their primary reading material. (7)

While Hughes's novels are not nearly as heavy-handed as the works of which she speaks, *The Golden Aquarians* and *The Crystal Drop* are clearly didactic and moralistic rather than artistic. Both novels demonstrate "extreme punishment"--desertification of a country or destruction of a planet--that follows what Hughes considers to be the "social wrongdoing" of environmental abuse. In other novels, *The Keeper of the Isis Light*, for instance, Hughes shows that she can produce a beautiful and artistic work in which is a subtle moral message.[17] But her preoccupation in *The Keeper of the Isis Light* seems to be with characterization, with exploring the development of the protagonist, rather than with moralizing. In *The Crystal Drop* and *The Golden Aquarians*, the agent of socialization inhibits the artist. While Hughes clearly has a valid message to deliver, her writing is of a higher calibre when those messages do not govern her writing.

Finally, it is important to note that, in these novels, Hughes demonstrates a faith in the enormous recuperative powers of nature. Even in the shocking devastation of southern Alberta in *The Crystal Drop*, the

Gaia community is able to help the earth to heal its wounds. Similarly, in The Golden Aquarians, "Aqua would heal, and the damage the Colonel had caused would be as it never was" (161). Indeed, the two themes discussed here, the utilitarian and moral necessity of respect for nature, are the result of Hughes's optimism; if she did not believe in nature's recuperative powers, her themes would be despair and mourning for a lost way of life. Instead, the themes are rooted in a faith that insists that it is never too late for positive action.

Notes

1. This is another example of a theme briefly discussed in Chapter One and conveyed by Hughes's statement that "we *are* in charge of our destiny even though it may not always seem so. Not totally, but there is always something you can do and sitting down and despairing is not a useful way to go . . ." (Jones, "Technological Pastoralist" 12).

2. Holmes Rolston, III, in "Values in Nature" states that nature is an aesthetic resource (127). Ernest Partridge, in "Nature as a Moral Resource," also briefly discusses the positive effect on humans of aesthetically appealing nature.

3. The name of another abandoned planet, Ethos, is also an ironic name, for it points to the absence of ethics or morality in Elliot, who shamelessly exploited and destroyed the planet.

4. Erazim Kohák supports Leopold's view in The Embers and the Stars (72), as does Ernest Partridge in "Nature as a Moral Resource." Also Joseph Wood Krutch, in The Best Nature Writing of Joseph Wood Krutch, (referring specifically to the planet Earth) states that "the whole concept of exploitation is so false and so limited that in the end it will defeat itself and the earth will have been plundered no matter how scientifically and farseeingly the plundering has been done" (296).

5. Elliot's ignorance of Aquarian intelligence adds further irony to his association with Prometheus. Prometheus stole fire from the gods and gave it to humans because he believed humans worthy of it. Elliot, however, refuses to see Aquarians, who are clearly a superior species to humans, as anything other than frogs; he never admits that there are intelligent beings on Aqua.

6. Hughes also shows that it is utilitarian to protect and respect nature because of its medicinal value. Although The Crystal Drop and The Golden Aquarians do not demonstrate this principle, it is clear in other novels that Hughes believes nature has the power to heal its inhabitants. In The Healing Power of Herbs, Michael T. Murray states that in sixteenth century Europe "there was a general belief that whatever disease was native to a country might be cured by the medicinal herbs growing in that region" (6). Hughes demonstrates this idea in her first novel, Gold Fever Trail, in which a young indigenous girl successfully treats scurvy in the white settlers with herbal medicines and teas. Similarly, in Beckoning Lights, the Brinians, an ancient Earth species who left Earth to avoid interfering with human evolution, return to Earth to collect a fungus whose active ingredient inhibits premature

aging and weakness in Brinians. Implicitly, Earth has the capacity to heal the Brinians because they are originally an Earth species and their disease--like scurvy which results from lack of vitamins found in fruit and vegetables--results from the lack of a nutrient found only on Earth. But Hughes's faith in the healing powers of nature goes further than the sixteenth-century idea; nature can heal not only the naturally occurring diseases, but non-natural diseases and afflictions as well. In Beyond the Dark River, Daughter-of-She-Who-Came-After treats radiation sicknesses with ointments, powders, and liquids concocted from herbs growing in the Southern Alberta region. In The Tomorrow City, when Caroline is blinded by a laser beam, the natural, icy raindrops "healed the burning pain at the back of her eyes" (137). And Rania, in The Promise, prescribes one part red-flower cactus juice diluted with four parts water to ease the pain of an accident victim.

7. Kohák's "The Gift of the Moral Law" (Chapter Two of Embers and the Stars) is an extensive discussion of the intrinsic good of nature, and humanity's moral obligation to that good. He also argues that nature itself is moral, and, thus, has moral worth. As one can deduce from the title of Ernest Partridge's "Nature as a Moral Resource," Partridge sees nature as a moral entity, one which can enhance humanity's morality. He also discusses the moral philosophy behind the environmental respect and concludes that "the direct experience of wild nature is an intrinsic good" (101).

8. Erazim Kohák insists that a human moral response to nature depends on the existence of God:

> If there is no God, then nature is not a creation, lovingly crafted and endowed with purpose and value by its Creator. It can only be a cosmic accident, dead matter contingently propelled by blind force . . . In such a context, a moral subject, living his life in terms of value and purpose, would indeed be an anomaly, precariously rising above it in a moment of Promethean defiance only to sink again into the absurdity from which he rose. (5)

Although he does not discuss Hughes's belief in God in connection with her ecological perspective, Stephen Wetherbe, in "Angels and Spaceships," notes the religious and theological aspects of Monica Hughes's writing. He states that "she tries to imbue all her novels with the Christian virtues, though religion is never mentioned" (33-34).

9. Frequently, but not always, the clay, in the biblical potter and clay metaphor, is a symbol of humans.

10. Aldo Leopold promotes a land ethic that regards nature

not as commodity, but as community (a variation on Hughes's holistic relationship theme), and the human as citizen rather than master of that community.

11. Hughes's negative portrayal of the colonial mentality suggests that her moralism also has an internationally political dimension. Col. Elliot clearly represents the Renaissance British Colonialism, but he also represents the people--stereotypically, but not exclusively, the United States Government and Military--who currently occupy, and exploit (or "develop") less powerful countries. While no specific country or political regime comes under Hughes's direct criticism, the political ideology that supports exploitation of other countries in the name of development is clearly an object of Hughes's disapproval. Hughes explores the theme of development and exploitation more fully in Crisis on Conshelf Ten and Earthdark.

12. Among many other rules regarding appropriate land use, Levites insisted that every seven years the land lay fallow so that it could rejuvenate itself. The first fruits--the best of any crop--were not kept by the farmer, but brought to the priests. This practice, of course, emphasized that neither the land nor its fruits belonged to individuals. Further, farmers left a part of their crops in the fields so that the poor could gather it freely for their own use, again underlining the fact that crops did not belong to the farmers.

13. Douglas J. Porteus, in Landscapes of the Mind, shows how naming the land is a form of possession and an act of power (72).

14. See J.R. Wytenbroek's "The Debate Continues," a short discussion of Hughes's perspective on technology and technocracy.

15. Hughes's call for a renunciation of power puts her in the category of feminist fantasy writers Charlotte Spivack speaks of in Merlin's Daughters (10).

16. While Mike Spotted Eagle is clearly a lunatic, Megan recognizes that his ideas should not be dismissed lightly, that he is "not all that crazy" (173). She realizes that although his words are not accompanied by practice, they accurately describe the destruction of the land and the immorality of that destruction.

17. In The Keeper of the Isis Light, Hughes explores, among other moral issues, the immorality of prejudice and ethnocentrism.

Chapter Three

The Journey into Knowledge

Monica Hughes, in "A Different Kind of Magic," defines speculative fiction as the "mythology of today, and it arises from that abrasive interface between the pure search for knowledge and the acquisition of instantly profitable inventions. It is good versus evil" (66). The theme of knowledge, its ambiguities, and its potential for both good and evil frequents science fiction. A brief glance through a journal like Science Fiction Studies shows that the moral implications of scientific knowledge and of technology are intensely scrutinized in both the science fiction literature and the literary criticism surrounding it. Hughes's science fiction is no exception; the theme of knowledge and its moral implications appears in some form in each of Hughes's novels, but especially in her science fiction novels. In this chapter, I will discuss two of Hughes's novels, one early, Beyond the Dark River (1979), and one more recent, Invitation to the Game (1990). I will explore the theme of knowledge and the role it plays in the ideal relationship between humans and nature. Initially, it seems that both novels have an anti-technological undercurrent that implies that the acquisition of knowledge, particularly the scientific knowledge that leads to invention of technology, is dangerous, and perhaps ultimately self-defeating. But a closer analysis reveals that Hughes's novels are in no way opposed to the acquisition of knowledge or to the invention of technology; they oppose the careless use of limited knowledge. While criticizing those who use scientific knowledge and technology without compassion, common sense, or a respect for nature, Hughes promotes a cooperative, utilitarian knowledge that demonstrates a respect for nature. Indeed, in Hughes's novels, knowledge used wisely plays a crucial role in developing the ideal relationship between humans and nature, a relationship discussed in Chapter One.

As they did in the works analyzed in the previous two chapters, the protagonists' journeys illustrate the theme: the characters, on their journeys, learn how knowledge can be used for both good and evil. The plots in these two novels, however, differ significantly from each other. *Beyond the Dark River* describes a circular journey in which the protagonists move away from and back to their homes, in order to mature and to improve their homes. *Invitation to the Game*, on the other hand, describes a linear journey. The protagonists move to a new place, where they create a new home and enjoy a holistic relationship with nature.

Unlike the circular journeys of the novels discussed in Chapter One, the protagonists in *Beyond the Dark River* do not journey towards a pastoral, green world, but away from it. A few Hutterite colonies and a band of Ermineskin Indians are the only organized civilizations to survive a nuclear disaster that destroys North American cities. The

Indians' way of life is the traditional, close-to-nature way of life Hughes often associates with indigenous peoples, whereas the Hutterites live in an enclosed, highly regulated, peaceful, farming colony, another of Hughes's fictional, agrarian dystopias.[1] When a disease for which a Hutterite colony knows no cure begins to kill Hutterite children, Benjamin, a teenage boy, brings the teenage Ermineskin healer, Daughter-of-She-Who-Came-After, to the colony, but her herbal remedies have no effect on the dying children. Benjamin and Daughter-of-She-Who-Came-After, both of whom crave adventure and relief from the expectations their societies have of them, journey into the ruined city of Edmonton, to the libraries of the University of Alberta, where they plan to search the books and journals for a cure to the disease. In the city, a truly chaotic, hostile "space," they narrowly escape a band of mutant humans (victims of radiation) who want to roast and eat Benjamin, as well as a crazy librarian who tries to deliver the teens into the hands of the hungry mutants. But they find no cure for the disease, only descriptions of diseases and recommended treatments that rely on antibiotics, medicines, and technologies that are no longer manufactured.[2]

On the journey home, Benjamin falls ill, and the teens take refuge in the home of a secluded elderly couple, Alice and Zach. While Benjamin recuperates, Zach teaches Daughter-of-She-Who-Came-After about germs, immunity, and non-symptomatic carriers. The two teens return to their homes symbolically reborn, having matured and having accepted themselves and their roles in society, grateful for the security their restrictive homes provide. They also return with the newly acquired knowledge that the Hutterite community, in order to survive, must gradually de-segregate itself and build up immunity against diseases. Ironically, the community that survived the nuclear disaster specifically because of its segregation is now in danger of extinction because of it. Benjamin, then, like the protagonists discussed in Chapter One, returns to undermine the rigid, dystopic structures, to improve his home and make it what Tuan calls a better "place." Daughter-of-She-Who-Came-After's return, however, is not a subversive one; she returns to live a life of sacrifice, to fulfill a higher spiritual calling as healer of the tribe.[3]

In Invitation to the Game, the narrator, Lisse, and nine other protagonists embark on a journey as well, but unlike Benjamin and Daughter-of-She-Who-Came-After, they journey to a pastoral setting, not from it. Further, their journey is linear and is made without their intent or approval, and indeed, without their knowledge. After pollution almost destroys humankind, robots are manufactured to "[keep] the industrial world running" (6), but when the human population returns to its previous size, the robots are not de-activated, for they work more efficiently than humans. Consequently, humans are faced with massive unemployment. The protagonists, a group of ten recently graduated students, are deposited in a Designated Area, (except for two characters who originally have jobs, but who later join the larger unemployed group), are given clothes and financial credits, and left to fend for themselves. Through cooperation and considerable effort, the group makes a comfortable home in an old factory and learns to survive in the hostile urban dystopia. After some time, they are invited to participate in The Game. The Game, an experience they believe is computer-generated or hypnotically induced, repeatedly takes them to an unidentified, uninhabited region, where they learn the terrain and search for clues to survival. Each time a member becomes ill or is injured, the group is awakened, and they return to their factory home, where they work and study to prepare themselves for future "trips" to the strange land. On one trip, they are left there for a longer period and are not awakened even when one of the group is ill. Gradually, they come to realize that, without being consulted, they have been physically transported to a different planet, and will never return to Earth. They must again create a new home. Eventually, they meet another group that has also been transported there, and they intermarry. The final chapter of the book is a description of the pastoral utopia they create, again through cooperation and great effort, one in which they are careful not to repeat the errors humankind made on Earth.

Although the plot and journey patterns differ significantly, the knowledge theme is central in each novel. Raymond E. Jones, in "Technological Pastoralist," states that Hughes keeps "coming back to the notion that knowledge is a dangerous thing" (16). Initially, it seems that the scientific knowledge that leads to the invention of technology is the "dangerous thing." It seems, at least superficially, that technology damages both humans and nature. In Invitation to the Game, this appears to be the case when technology, meant to enhance human lives, created pollution, a by-product of burning fossil fuels, which contaminated the environment and directly suppressed human life: "Pollution caused the sudden drop in fertility that nearly destroyed human life on Earth" (168).[4] Similarly, in Beyond the Dark River, technology might be blamed for damaging both humans and nature. The nuclear disaster that wreaks havoc on plants and animals and destroys large civilizations can only be produced by advanced technology. These superficial suggestions of an anti-technological bias might imply that scientific knowledge is not only dangerous, but also self-defeating, for in both novels, the human population decreases significantly.

One might find further reason to label Hughes as anti-scientific, or at least, anti-technological, in her descriptions of machinery. Often machines are described in terms of wild beasts--animate, powerful, and sinister. In Invitation to the Game, for instance, repeated reference to the robots' "claws" make the robots appear cruel and malevolent (1, 4). Their increasing supplantation of human workers, as well as Lisse's recurring fear that she is under observation like a rat in a maze, only adds to the sense of insidious technological intrusion on human life. Similarly, in The Golden Aquarians, the machines resemble monsters, "dinosaur diggers" (78, 99) whose "scars where [they] had torn into the surface of Aqua" (157) are visible even from orbit. And in The Tomorrow City, C-Three, the city computer, is like a "'mad beast'" (120) that ruthlessly eliminates the vulnerable elderly and homeless people, kills a boy's pet dog, and blinds a young girl.

It is important to note, however, that despite the loaded language and the superficial anti-technological implications, the technology and scientific knowledge are not the "dangerous thing" of which Jones speaks. Rather, the problem lies in the manner in which humans use the scientific knowledge or technology; without exception, the human error behind the misused scientific knowledge is the subject of Hughes's criticism.[5] The robots, in Invitation to the Game, are not the primary flaw in society, despite their sinister portrayal. The fault lies in the Government that is unwilling to sacrifice robot efficiency in the interest of human well-being and finds it "easier to get rid of the young people" (168). Likewise, Colonel Elliot, in The Golden Aquarians, is responsible for damage inflicted on Aqua and previously terraformed planets. His earthmovers have no intent; they are simply tools, powerless without human drivers. In The Tomorrow City, the computer is not to blame for human suffering. The people who programmed it (including Caro) without thinking of the potential dangers are the ones who have erred and must reprogram it to survive. Erazim Kohák, in The Embers and the Stars, emphasizes the importance of this distinction:

> To rant against the works of technology as the source of all evil is not only futile but also false. Technology is not the source of anything, though it does multiply human capabilities for good and evil alike. (211)

Invitation to the Game and Beyond the Dark River show that the "dangerous thing" about scientific knowledge and technology is the multiplied human capability for evil that they allow. In both novels, the inflated human capacity for evil manifests itself in the suppression of an ideal relationship between humans and nature. This suppression is most obvious in the manner in which technology is used, often unintentionally, to damage nature or humans. The human failure to control pollution in Invitation to the Game, as well as the human failure to control nuclear radiation in Beyond the Dark River, is to blame for the damage to both humans and nature.

Invitation to the Game also shows that humans indirectly suppress harmony with nature by allowing technology to suppress individuality. In Chapter One, I showed how Hughes's novels suggest that a harmonious relationship between humans and nature is a prerequisite for individual self-fulfillment. A corollary is that suppression of individuality prevents harmony between humans and nature. Suppressing individuality, then, inflicts double damage: the oppressed individuals are unable to find self-fulfillment, and they are unable to achieve a holistic relationship with nature. The robots, in Invitation to the Game, are technological marvels, products of advanced knowledge, invented to fulfill a genuine need; their existence is, in itself, not harmful or negative. However, when their efficiency precludes humans from useful employment, a primary source of individual expression and fulfillment, they become the weapons of immoral power figures. Lisse insists that human happiness depends largely on self-fulfillment: "'Happiness isn't a goal, it's a result. If you've got a job that's worth doing. If you can be proud of yourself'" (38). The protagonists in the novel are jobless, and, thus, are cut off from individual self-fulfillment. In addition, because they are unemployed, they are subject to severe restrictions and are not permitted to leave their urban Designated Area; their unemployment severs them from any contact with nature and, thus, denies them the pursuit of a holistic relationship with nature. Further, the novel shows that when positive sources of self-fulfillment are removed, humans are not only unhappy, but they also become abusive. The greatest danger the teens face in the urban environment is the gangs of violent unemployeds, who destroy what they can "Because violence was better than forty years of nothing" (13). The failure in this dystopia is not scientific, but moral: human self-actualization and harmony with nature have less value than efficiency and capital.[6]

Perhaps Devil on My Back, a novel discussed in Chapter One, provides the most literal example of individual suppression enforced by technology. Pure, factual knowledge, in the form of infopaks, weighs heavily on the backs of the Lords, forcing them into a crooked posture; the more knowledge they acquire, the greater their stoop.[7] (Ironically, the Lords sacrifice the very quality which defines humans from other primates and animals--a completely erect posture--in favour of the acquired knowledge they believe to be a sign of advanced evolution.) The rationality not only prevents self-fulfillment, but it prevents any form of individuality; it even prevents the citizens from thinking for themselves. In her interview with Jones, Hughes confesses, "I see technology as having that possibility. And I certainly see education today as being very, very close to this narrowing centre" (16). But this, too, is a moral failure rather than a scientific one. The Lords who originally create the computer-dependent system do so selfishly to further their own power and factual knowledge at the expense of others' freedom. Ironically, in their obsession with power and rationality, they sacrifice common sense, spiritual knowledge, self-knowledge, and consequently, their own freedom as well.

Hughes's implicit criticism in Devil on My Back, then, is not directed at technology or at scientific, factual knowledge but at those, in the novel and in current society, who aggrandize rationality at the expense of spiritual knowledge, knowledge of self, freedom, and common sense.

In addition to harming nature and stifling individual self-fulfillment, allowing or directly using technology to thwart the development of true community suppresses any potential for an ideal relationship between humans and nature. The scenario out of which Beyond the Dark River rises is an example of technology used to inhibit, rather than encourage, the growth of community among humans. Presumably, the nuclear disaster that destroyed the cities was an act of war or aggression, an intentional effort to use technology to harm other humans. The results were devastating: the cities themselves were ruined, but, more importantly, most of the people living in, or near, the cities were killed or severely injured. But whether the original act of destruction was intentional or not (and we are not told that it is), the final result is the same: because of badly managed technology, the larger human community is severely injured. The city-dwelling survivors are badly mutated by the radiation. Their words and actions suggest that they are mentally, as well as physically, impaired (95).[8] Their attempt to kill Benjamin for food implies that they are no longer capable of pursuing genuine community with other humans.[9]

The ravaged states of the city and its sub-human inhabitants also prevent the development of community within outside groups. Since the disaster, the Hutterites have not left the boundaries of their colony, except to get salt (34). The Ermineskin, while not as cautious, are also segregated. With the exception of the Healer women, they do not approach the city (78), and do not leave the boundaries of the forest (81). Zach and Alice, the elderly couple the teens meet on the way home, are hostile towards others. When Daughter-of-She-Who-Came-After approaches their home, they shoot in her path, attempting to frighten her away.

In Hughes's novels, genuine community is also thwarted when technology and scientific knowledge are used, without foresight, to gain personal profit rather than to benefit the larger human population. For example, in Invitation to the Game, Charlie, an underground druglord, offers Alden (illegal) employment, and offers the group travel permits (40). In exchange, he wants "'Information. I was particularly interested in [Alden's] background in chemistry'" (37). When Alden refuses to use his expert scientific knowledge to destructive ends, Charlie's thugs attack him. Although Charlie offers "'Happiness'" (38), his quest for "'making money, wrapping up this DA'" (40) stifles any opportunity for community that he, his customers, and his employees might have.[10] In "A Different Kind of Magic," Hughes criticizes knowledge used for profit:

> But there has crept in another kind of science which should not even be graced with the same name, because it is a perversion of the truth. . . . . This 'science' takes each newly discovered piece of the jigsaw puzzle and looks at it out of its context within the cosmos and then asks the question: What use can we make of this *now*?
>
> So, from our understanding of the balance and symmetry of atomic structure has come, far too rapidly, nuclear energy, with its poisonous and apparently indestructible waste products. From our initial understanding of the double helix has flowed recombinant DNA, genetic engineering, even the possibility of cloning higher life forms, all of these bringing with them benefits certainly, but also a host of yet unknown and ill-understood effects. It is this subversion of true science, which is the steadfast and humble seeking for truth for its own sake, that the myth of Pandora's box is made actual. (66)[11]

Both Beyond the Dark River and Invitation to the Game are myths of Pandora's box. The lingering effects of radiation in the former and the pollution and reliance on robots in the latter are the results of technology used selfishly and without foresight. Such misuse makes true community impossible. Since true community with other humans is part of Hughes's holistic relationship with nature, this misuse also suppresses the development of such a relationship.[12]

Clearly, thus far, Hughes's novels show the multiplied human capabilities for evil that technology and scientific knowledge allow. But without exception, Hughes's criticism is not directed at the technology or at the scientific knowledge that produced it, but at the society that misuses the knowledge or technology. She criticizes the social values that prefer efficiency and capital over human well-being, that find more worth in facts and rationality than in spiritual knowledge, that see community with others and harmony with nature as acceptable sacrifices for wealth and power.[13] In short, Hughes criticizes the social values that allow, and even encourage, the use of scientific knowledge and technology without common sense, compassion, and a profound respect for nature.

That Hughes is not opposed to the pursuit of knowledge and the invention of technology is clear. Hughes admits in an interview that "I find the technical world fascinating" (Jones, "Technological Pastoralist" 17). Further, in "A Different Kind of Magic," Hughes praises "knowledge for the sake of knowing, seeking for the sake of finding; it is joyful and fulfilling" (66). Beyond the Dark River and Invitation to the Game, while they show the negative side of scientific knowledge, also emphasize its value. For instance, the novels show that accurate factual knowledge prevents fear and superstition from overwhelming a society. Yi-Fu Tuan, in Space and Place, notes that "Myths flourish in the absence of precise knowledge" (85). We have already seen examples of this phenomenon in The Guardian of Isis and Ring-Rise, Ring-Set. In Landscapes of Fear (1979), Tuan further notes that knowledge prevents the development of fear in a society (15-16). A child fears the dark because she or he does not know what lurks in the darkness. When the area is illuminated, the child sees that there are no dangers in the area, and enters without fear.

In Invitation to the Game, the protagonists realize the relationship between ignorance and fear, and pursue precise knowledge expressly to control their own fear. When they finally deduce that they are on another planet and have been hypnotized to forget the journey from Earth, they return to the landing spot to look for signs of landing gear: "'We have to go. We've got to find the truth, otherwise uncertainty will fester inside us like a thorn under a fingernail'" (151-52). Only after they confirm that they are indeed on another planet can they work towards making their new home a felicitous place.

The relationship between factual knowledge and fear also appears in Beyond the Dark River, but rather than showing positively how knowledge prevents fear, Hughes shows the negative flipside, that without precise knowledge, fear and superstition overwhelm a society. Both the Hutterites and Ermineskin have little precise knowledge, and, consequently, are subject to superstition and fear. The Hutterites fear anything associated with the city and believe it is intrinsically evil. The airplanes once "'flew by Satan's hand'" (40), and they are free of rust because of "'some sorcery in the metal'" (39). The child who climbed the metal pylons broke his back because he touched "something that was part of Babylon" (18). The destruction of the city is explained as "'the final abomination of desolation'" (32). The Ermineskin healer who comes to help them is suspiciously regarded as "'a heathen witch'" (35). Even the sickness that invades their colony is infused with supernatural intent; it is "'sent from God to test us and to remind us to keep to his ways'" (33).

The Ermineskins' superstitions are not as black-and-white as those of the Hutterites, but they are no less influential. The road to the city is "a road of power, guarded by magic symbols" (6), and the coins the healers receive as payment for their services are "rimmed with magic inscriptions'" (7). Even when the damaged people disgust Daughter-of-She-Who-Came-After, she treats them because she fears that "'If you help one and refuse to help another the power will go'" (9). But when her treatments do not bring immediate recovery to the Hutterite children, her fear compels her to accompany Benjamin to the city: "'If I do not continue to help you, [the spirits of the children] will devour me'" (88). Throughout the teens' journey, Daughter-of-She-Who-Came-After sings and chants to please the spirits, and is "'so afraid . . . that my mouth is dry and my guts turn to water'" (88). At one point, her overwhelming fear literally paralyzes her (89-90).

The superstitions are central to the cultural identities of both societies and are indicative of a certain spiritual dimension in the societies. In her interview with Jones, "The Technological Pastoralist," Hughes clearly admires the genuine spirituality she sees in indigenous peoples, especially when it promotes an intimate communion with nature. The spirituality of both of these societies has nurtured the kind of life that allowed them to survive the nuclear disaster. Nevertheless, the superstitions clearly cause both peoples to be governed by fear, rather than by a genuine spiritual respect for, and communion with, the land. The introduction of precise knowledge would, no doubt, temporarily disrupt the cultures, but it would also provide relief from fear, and, if used wisely, would promote a holistic relationship with the land.

Precise knowledge not only diminishes fear and superstition, but, on a more practical level, it is an essential tool for basic survival and healthy living, both of which are necessary for communion with nature. In Invitation to the Game, the protagonists survive in the urban dystopia largely because of their knowledge. They are able to build a secure and comfortable home, to defend themselves and to raise extra money for protein. That their knowledge gives them a distinct advantage is evident when contrasted with "a scrawny little rat of a girl, living alone. . . . [in a] dingy room," whose "teeth were bad and two were missing" (23). From her limited comprehension, and the fact that she has had "'No school,'" one can assume that her plight is related to her ignorance; she does not even know how to brush her teeth, let alone build a comfortable home. The protagonists also survive on Prize because of their knowledge. Even on an alien planet they recognize the food value of certain plants and animals, as well as the usefulness of kaolin, chalk seams, native copper, and a host of other elements.

The Hutterites, like the scrawny little girl, suffer because of their limited knowledge. A plague that once swept through the colony is about to kill another generation of children because the Hutterites have not sought the knowledge that would prevent or fight the disease, despite their previous experience. Further, after a rainy spring, they were malnourished, unaware of the nutritious tubers that grew all around them (58). When Benjamin learns of the bulrushes' food value,

> He found himself blushing for their stupidity. How many other things did they not know? That they would never find out if they never talked to other people? (58)

Benjamin's newly acquired knowledge of germs and immunity will promote a physically healthier society that is naturally resistant to many infectious diseases. His new knowledge of the nutritional value of bulrush tubers will enhance Hutterite diet and prevent starvation in difficult times. But there are other tragedies in the Hutterite colony waiting to happen if the Hutterites do not aggressively pursue factual knowledge in the near future. Since the man who created the solar panels and windmills is dead (34), the Hutterites will be unable to repair or replace them when they finally break down. The results of their ignorance are potentially disastrous, since they rely heavily on technology for power. They also rely on guns for "protection of the colony against bears and for the occasional buck hunt" (47). But their ammunition supply is depleted, and they do not know how to manufacture gunpowder (47). Nor do they have the simple bow and arrow technology of the Ermineskin. When the ammunition inevitably runs out, the Hutterites will be at the mercy of wild animals, and the occasional buck hunts will be a thing of the past.

Since these are science fiction novels, they focus on the value of scientific knowledge. In addition, however, they show the value of historical knowledge. In Invitation to the Game this value is positively demonstrated in the understanding the protagonists have of Earth history; it allows them to establish a meaningful context for their life on Prize, to analyze the past, to take measures to avoid repeating historical errors, and to increase their chances of continued survival on Prize. For the new Prize colonists, then, historical knowledge has philosophical, ethical, and pragmatic value.

The Hutterites, on the other hand, have shunned the historical knowledge, and it costs them dearly.[14] When Daughter-of-She-Who-Came-After deduces that an entire generation of children died from a similar disease that now inflicts the children, the Hutterites cannot help her to determine the cause; they keep no chronicle and do not know the details of their past. The vulnerability created by this deficit appalls Daughter-of-She-Who-Came-After:

> "How can you be a tribe if you have no memory of who you are, or who your fathers and mothers were back to the beginning? . . . . If you cannot tell ahead in which years it will rain all through the summer because it has always done so in that kind of a year? You are a people at the mercy of the

moment if you do not reverence the past." (65)

The necessity of knowledge (both scientific and historical) and technology for survival is a common theme in other science fiction novels by Hughes. Olwen, in *The Keeper of the Isis Light*, survives on Isis because Guardian, the marvellous robot, replaces her parents and successfully cares for her. She thrives on Isis because Guardian applies his extensive knowledge directly to her body and surgically alters her to withstand Isis's elevated radiation and depleted oxygen levels. In the sequel, *The Guardian of Isis*, Olwen and Guardian's technology, as well as their intimate knowledge of the planet itself, allows them to restore the flooding river to its original path, thereby saving the colony from certain destruction and restoring life to the recently desertified region of Isis. The theme appears in the final volume of the trilogy, *Pedlar of Isis*, as well. The colonists are almost destroyed by the technology of Michael Flynn because they do not understand it and because they have no historical knowledge of the time when they, too, were technologically advanced. Consequently, they are dazzled by Flynn's powers. Guardian's wisely used technology, however, saves the colony once again. In *Devil on My Back* and *The Dream Catcher*, the human race survives the Age of Confusion because it has the technology to live underground for an extended period. Despite Hughes's obvious admiration for the Ekoes' natural life in *Ring-Rise, Ring-Set*, that life, without technology, is doomed. The technology of the Tech society offers the only hope for survival of humans, and, indeed, for the survival of nature. The Ekoes' lack of historical knowledge only adds to their vulnerability; conversely the Techs' "'many memories'" are part of the reason they successfully save the world (115).

The values of knowledge and technology, then, are as evident as their dangers. Knowledge can damage humans and nature, and it can suppress individuality and community; it can also protect a community from the tyranny of fear, and it can promote and enhance human survival, healthy living, and a holistic relationship between humans and nature. Erazim Kohák explains that

> Technology . . . is not only a convenience but also an authentic human possibility. . . . Technology is the human's achievement, not his failing--even though the use he chooses to make of it may be fallen indeed. If the products of human *technē* become philosophically and experientially problematic, it is . . . because we come to think of them as autonomous of the purpose which led to their production and gives them meaning. We . . . [lose] sight of the moral sense which is the justification of technology. Quite concretely, the purpose of electric light is to help humans see. When it comes to blind them to the world around them, it becomes counterproductive. The task thus is not to abolish technology but to see through it to the human meaning which justifies it and directs its use. (24)

In Invitation to the Game, the protagonists have a unique opportunity to find the human meaning in knowledge and technology, and to demonstrate the enormous positive potential of scientific and historical knowledge used wisely. They are given a new planet, a *tabula rasa*, which need not be marred with the errors of Earth's human history. Most of Hughes's previous science fiction novels portray dystopias that hide human meaning. Often the dystopias are contrasted with other idyllic societies that enjoy a harmony with nature, but usually some kind of dependence or potential disaster threatens their idyllic life.[15] But Invitation to the Game ends with a genuinely utopic society, one with the tools to continue its way of life indefinitely. Those tools, significantly, are knowledge and nature; the protagonists come to the planet "with nothing but our wits and our will to live" (154), and find on the planet nothing but an alien nature. Because the nature on Prize is pristine and welcoming, and because the settlers' combined knowledge is so extensive, their tools are sufficient to build a utopia. They enjoy a holistic relationship with nature, and, consequently, genuine community. Their society nurtures and thrives upon individuality. Their lives are filled with purpose and they are very, very happy:

> We have discovered something wonderful on Prize: that there need be no separation between what used to be called 'work' and 'play.' We do everything as well and as joyfully as we can and it turns out to be beautiful. (175)

The fertility of the new, green world, as well as the utopia's capacity to continue into future generations, is symbolized in Lisse's pregnancy.

In many ways, this utopia is reminiscent of the Arcadia often seen in pastoral literature. It fulfills the

Georgic ideal as described by Phyllis Bixler, an authority in pastoral children's literature, in "Idealization of the Child and Childhood in Frances Hodgson Burnett's Little Lord Fauntelroy and Mark Twain's Tom Sawyer." The protagonists, that is, lead agrarian lives, they have a cooperative relationship with nature and with each other, they work to help nature yield its bounty, and they determine their work and social life by season. In addition, eating, sleeping, and working become meaningful activities that imply order, a quality Lois R. Kuznets notes as characteristic of pastoral children's literature (161). John F. Lynen, in The Pastoral Art of Robert Frost, notes that pastoral literature "arises from the impulse to look back with yearning and a degree of nostalgia toward the simpler, purer life which such a society has left behind" (12). Undoubtedly, Invitation to the Game, as well as some of Hughes's other novels, is infused with a degree of nostalgia. Such nostalgia is evident in the agrarian constitution of the Prize utopia, in the elevation of pastoral ideals, and in the frequent attention Hughes gives indigenous, less technological cultures. Ultimately, however, when tension develops between a forward-directed and a nostalgic vision in Hughes's novels, she tips the balance in favour of the former; hers is a forward-directed view, rather than what Nodelman calls a "retrogressive" vision (May and Nodelman 229).

As noted in Chapter One, Hughes's admiration for non-technological and indigenous societies does not grow out of a longing for a simpler way of life. Instead, it comes from her respect for the intimate communion with nature such societies develop, a communion that her novels suggest is also possible in more technological societies.[16] The "regression" to an agrarian life in Invitation to the Game is only a temporary measure that is necessary to establish a holistic relationship with nature. The protagonists must correct the errors of Earth technology and retreat to pre-fossil fuel technology in order to avoid polluting Prize in the same way Earth was polluted. The settlers therefore found an optimistic, innovative, and knowledgeable society with forward momentum: "We have been reliving the discoveries of our ancestors, only speeded up enormously, so that we will move from the Stone Age to the Bronze in less than five years" (167). Further, they "are careful and . . . talk a lot about what went wrong on Earth" (168). Given their conscientious approach to Prize and the rate of their development, the reader can surmise that, although they will, in a few decades, be as technologically advanced as Earth, they will have developed a non-polluting technology. Provided that they control their growth and do not allow their population to reach a size at which a holistic relationship with nature is impossible, they will thus achieve the condition in which, to use Kohák's terms, technology allows the human meaning to stand out.[17]

Indeed, the Prize colony must have a forward-looking vision if it is to remain utopic, for in Hughes's novels, each time a society intentionally stifles development, it also stifles individuality and becomes dystopic. The Hutterites, deficient in historical and scientific knowledge to begin with, deny that any useful knowledge can be acquired. That they suffer because of their closed system of values is Hughes's implicit comdemnation of their spiritual arrogance, of their assumption that knowledge, other than that which they already have, can be of no possible value. The Hutterites, whom Hughes consistently portrays negatively, contrast sharply with the settlers of the Prize utopia, who are clearly admirable and are lauded for their open and forward intellectual attitudes.

Hughes's novels implicitly demonstrate conditions under which knowledge can enhance life and promote a holistic relationship with nature. First, these novels iterate the importance of a cooperative knowledge. The protagonists, in Beyond the Dark River, survive their journey to the city because they cooperate and pool their knowledge. They enter and exit the city safely because of Daughter-of-She-Who-Came-After's knowledge of water transportation, both in the canoe and on the log, and because of her skill with bow and arrow. But they escape the Librarian's trap because of Benjamin's knowledge: he recognizes the screen as an escape route, and understands how to remove the screws and open the screen (129).

Without the other, neither protagonist would survive the journey. Similarly, in Invitation to the Game, the protagonists' combined knowledge allows them to survive the many dangers of the urban environment on Earth. Scylla's paintings and Brad's toys earn them the extra credits with which to purchase protein. Katie's karate allows them to defend themselves in the violent city. Trent and Brad's electronic knowledge results in a complex security system. Their ability to cooperate and, thus, to survive in the urban environment, qualifies them for The Game, and eventually results in their transport to Prize, where their cooperation is again crucial for survival. Without Rich's medical knowledge, Lisse might have died of pneumonia. Without Benta's farming knowledge, they would not have found many edible plants, nor would they have known how to trace wild animals. Karen's historical knowledge provides them with a hopeful future: she can analyze the errors made on Earth and ensure they are not inevitably repeated on Prize. The list, of course, continues; each member's contribution is significant. Their cooperation is indicative of a greater holism and together, they are much more than the sum of their parts:

> "Think how The Game worked; we had to learn to cooperate, to become something stronger than each of us alone, to become . . . well, a tribe'" (158).

Before one can contribute to the cooperative knowledge, however, one must first be an individual. The Hutterites, in Beyond the Dark River, suppress individuality and the knowledge of self that individuality promotes. Because the individual has no place in their society, their combined knowledge is limited; each member of the community essentially knows the same things. Benjamin can contribute nothing new to his society until he leaves the colony and gets outside help and knowledge. Symbolically, he cannot contribute until he is reborn as an individual. His symbolic death and rebirth experience occurs after he is dunked in the river, catches pneumonia, and, for three days, is either delirious or unconscious. As a new individual, he gains the knowledge of germs and immunity that will save his colony, as well as the knowledge of self that will allow him to stand up to the Preacher, to loosen colony strictures, and to visit Zach and Alice. Daughter-of-She-Who-Came-After is valuable to her own society and to the Hutterites precisely because of her uniqueness; in her role as Healer, she contributes medical knowledge. Although she is not ill for three days, the dunking in the river is a rite of passage for her as well, and she, too, returns home with increased medical knowledge and with the knowledge of self that allows her to accept and affirm her unique role in society.

Similarly, in Invitation to the Game, the group's cooperative knowledge is substantial specifically because the knowledge of its individuals is so diverse. And, as usual, these protagonists also undergo a rebirth experience in order to achieve self-knowledge:[18] they are brought to the new planet in their "natal egg" (153) out of which they are hatched into a new life.[19] Although the group had been a cohesive unit on Earth, the trauma of their realization temporarily disintegrates that cohesion on Prize. They are "Not like a *group* anymore" (121). Each member must go through his or her own cycle of "denial, anger, self-pity, and resignation. . . . acceptance" (164). Once the cycle is complete, each member is aware of the importance of her or his unique contribution to the group and is able to make that contribution. The individual maturity and self-knowledge that grows out of this experience is most noteworthy in Rich. When he first joins the group in their factory home on Earth, he is arrogant and selfish, concerned only with "'Money. Power. What other motives are there?'" (95) Near the end, however, he is a mature, caring individual whose compassion comforts Lisse: "Strangely enough, it was Rich's arm around me that comforted me" (154).

Hughes does not confine the need for cooperative knowledge to the members within a group. On the contrary, she shows that cooperation must also occur between groups and societies as well. As one can see from the Hutterite situation in Beyond the Dark River, ethnocentrism is counterproductive. Their resistance to outside influence results in disease and inbreeding (23), as well as a gradually decreasing capacity to manage emergencies.[20] In order to survive, they must lose their ethnocentrism and must cooperate with and learn from the other cultures and people around them. In Sandra Mallet's interview with Hughes, "A Holocaust in Alberta," Hughes emphasizes the value of learning from other cultures:

> "Truths and realities discovered by different cultures were denigrated and are just being rediscovered and appreciated. For instance, we're going all over the world in medical research only to discover that some old herbal remedies really do work." (36)[21]

In Invitation to the Game, the protagonists have the wisdom to seek contact with those outside their own group. On Earth, they realize that they "'can't stay in the womb forever, no matter how cozy,'" or they will become "dangerously ingrown" (28). Likewise, on Prize, when they meet another group, despite the fact that the other group is "so different, almost foreign," they eagerly "ran towards each other, our arms outstetched. We met and hugged each other" (173). Their mutual acceptance results in increased knowledge and resources, a healthier gene pool, and a greatly enhanced life.

Cooperation is, of course, the beginning of genuine community, and thus, is an integral part of the holistic relationship between humans and nature.[22] Hughes's novels also implicitly recommend the pursuit of useful knowledge, particularly useful knowledge directed at creating an ideal relationship between humans and nature.[23] In Beyond the Dark River, the Hutterites have clearly benefitted from their useful agricultural and hygenic knowledge; they have thriving farms and families while other holocaust survivors barely manage from day to day. The Ermineskins' extensive knowledge of nature is even more useful. Daughter-of-She-Who-Came-After is fully equipped to survive in the wilderness: she knows which roots to eat, how to make and handle bow and arrows, how to make and use herbal medicines, and how to build a drill fire (something that characters in other Hughes novels are repeatedly unable to do). Similarly, as previously described, the protagonists, in Invitation to the Game benefit from their diverse, useful knowledge both on Earth and on Prize. Further, they actively pursue practical knowledge: once they learn the nature of The Game, each member prepares him or herself for the next trip by researching information that could prove useful. Katie and Rich develop a "friendly partnership between medicine and botany" (108), Lisse researches ancient arts and crafts that will be useful on a planet to which she can take no technology (176), Scylla learns to weave fabric on a loom, and they all study fire-building and pottery firing (109). Notably, their knowledge, while decidedly practical, is environmentally friendly as well.

The novels, while clearly extolling the virtues of practical knowledge and common sense, also cast aspersions on knowledge that is too narrow to be practical. This is especially noticeable in the area of medicine. Rich, in Invitation to the Game, finds that much of his technical medical knowledge is useless, and becomes "frantic at his inability to treat us, since none of the expensive antibiotics he was used to were available to us" (108). To solve the problem, he broadens his medical knowledge, and studies folk and herbal medicine.[24] Similarly, in Beyond the Dark River, the University medical libraries are of no use to Benjamin and Daughter-of-She-Who-Came-After. They provide no information on how to treat diseases without the advanced technologies and antibiotics available today. These situations raise significant doubts about the value of modern medicine. They are examples of Hughes's concern that "education today [is] very, very close to this narrowing centre" that inhibits, rather than promotes, individual growth (Jones, "Technological Pastoralist" 16).

Knowledge, in Monica Hughes's novels, is always complex and ambiguous. Its dual capacity to enhance and to suppress individuality and community is simultaneously frightening and exciting. But ultimately, Hughes's approach to knowledge, like her approach to the relationships between humans and between humans and nature, is holistic; a society needs revelation, passed down through the centuries in the form of historical knowledge, scientific knowledge gleaned from careful observation of the world around the society, and understanding developed through thoughtful appreciation of history, science, and experience. In addition, society must exercise co-operation, compassion, common sense, and a respect for nature. When all of these parts are combined in a Hughes novel, one is left with a whole far greater than the sum of the parts: a utopia. Any society, in a Hughes novel or otherwise, that settles for less is inevitably an object of Hughes's social criticism.

Notes

1. Patrick Verriour, in a review of *Beyond the Dark River*, (*In Review: Canadian Books for Young People* 14.2, April 1980) states:

> Clearly, the author's sympathies lie with the Indians and their natural wisdom so that the helpless plight of the holocaust victims, the religious bigotry of the Hutterite preacher, and [Benjamin's] rash, ingenuous nature only serve to emphasize the Indians' pastoral nobility. (47)

Hughes's sympathy for the Ermineskin is further emphasized by the huge liberties she takes in her negative depiction of the Hutterite colony, some of which reflect faulty research.

First, in the introduction, Hughes states that "The Hutterites, together with the Mennonites and the Amish, originated in 16th century Austria and Moravia, during the Protestant reformation" (vii). Cornelius J. Dyck, in *An Introduction to Mennonite History*, shows that the Anabaptist movement began instead in Switzerland, in the 1520s, with Ulrich Zwingli and a group of followers (37ff). The movement spread across Europe and Menno Simons (from whom the Mennonites derive their name) became an Anabaptist in the Netherlands in 1525, and eventually grew to be "the most important leader in the first generation of Dutch Anabaptism" (105); the Mennonites originated, not in Austria or Moravia, but in the Netherlands. The Hutterites, on the other hand, did originate in Austria and Moravia under the direction of Jacob Hutter in the 1530s. Their primary emphasis was a renunciation of private possessions, which were committed to the community of goods (76-77). But the Amish did not develop until 1700 and developed, not in Austria or Moravia, but in Alsace and Switzerland, where they broke away from the rest of the Mennonite Anabaptist movement and set up communities that practiced more extreme church discipline (i.e., foot washing rituals, simple, uniform clothing and hairstyles, and absolute excommunication and shunning of transgressors) (148-49).

Secondly, Hughes's novel suggests that the Hutterites rely solely on the Bible for direction. According to Michael Holzach's *The Forgotten People: A Year Among the Hutterites* and Paul S. Gross's *The Hutterite Way*, the Bible is central to their religion, but they rely equally on a number of old volumes, none of which are mentioned in Hughes's novel. These volumes, dating from the sixteenth century, outline the structures and regulations of the communities. In addition, they offer the specific interpretations of the Bible, as well as confessions of faith and sermons upon which all Hutterite religious practices and education are centred (Gross 87-90). Indeed, the

Hutterites have a history of excommunicating dissenters who read the Bible and follow it alone, rather than following the specific outlines and interpretations prescribed in the revered volumes.

If the Hutterites did rely on the Bible exclusively, as Hughes indicates, they would likely believe that the nuclear disaster was not God's punishment on the city, but the second coming, or the "Rapture" of Jesus (as predicted in Matthew 24:30-44, Mark 13:26-37, Luke 17:20-37 NIV) and they had been left behind (a sign that they were not genuine followers of Jesus).

Thirdly, Hughes's extrapolation that the Hutterites would reject rather than remember the past is rather extreme. Not only do the Hutterites have _Das Hutterische Geschictbuch_, (_The History Book of the Hutterite Brethren_) (Holzach 17), but they also have an extremely rich oral tradition, in both story and song, that chronicles in detail their history throughout the centuries. Their historical folk music tradition is so extensive that a number of scholars have traced theories of Hutterite social development from the music (Martens, "Hutterite Songs: Aural Transmission from Sixteenth Century" 5-15). Thus, Benjamin's surprise at Daughter-of-She-Who-Came-After's seemingly endless supply of songs is rather unbelievable. More likely, he, too, would have a song for every occasion.

Fourthly, according to the descriptions of Hutterite life provided by Holzach and Gross, it is unlikely that a male would be given the task of learning to read in order to be the medical authority on the colony. Although men do occasionally participate, nursing and medicine seem to be the realms of Hutterite women. Many studies, however, including those of Holzach and Gross, note that Hutterites are rapidly losing their tradition of herbal medicine, and are increasingly relying on the "worldly" doctors and antibiotics.

Beyond the Dark River is fiction, and futuristic fiction at that, but some of these extrapolations are too extreme to be plausible. Perhaps Hughes would have been more successful had she created a new, post-nuclear-disaster society with Hutterite-like values (like the society John Wyndham portrays in his 1955 children's science fiction novel, _The Crysalids._)

2. Unfortunately, this narrow portrayal of the University library is as false as the narrow portrayal of the Hutterites. Medical libraries, including those at the University of Alberta, do not save only descriptions of diseases and recommended pharmaceutical prescriptions. They save histories of medicine, histories of diseases, and case studies. In addition, they save volumes on herbal, folk, and homeopathic medicine, which undoubtedly would be of substantial aid to the protagonists. Hughes's criticism of modern medicine is obvious, but unfortunately, she manipulates the facts to deliver her message.

3. Benjamin's return to the Hutterite colony is a subversive one for he must encourage the change-resistant colony to move out of its self-imposed boundaries and seek contact with non-Hutterites in order to build up immunity. He must also disregard colony rules and fulfill his promise to Zach and Alice to return regularly and to take their four-year-old grandson to the Hutterite colony for adoption (151-52). At the same time, however, there is a muted tone of acceptance of the confining way of life, or, to use Nodelman's terms, the novel hides "a retrogressive vision under [a] theoretically revolutionary fervor" (May and Nodelman 229). Undoubtedly, this is a necessary plot device because of the appalling standards of life outside the colony. We must agree with Benjamin that "Compared with what he had seen in the last few days [the Hutterite life] was a wonderful life" (150).

Daughter-of-She-Who-Came-After returns to her society as well, but not to subvert its structures. She has learned to accept her destiny as the Healer of the community, a destiny she earlier resented. Although her attitude may appear to be fatalistic, and thus contradictory to Hughes's insistence that "there is always something that you can do" (Jones, "Technological Pastoralist" 12), it is instead an act of spiritual heroism. Daughter-of-She-Who-Came-After discovers that to be herself is to obey a higher calling, to sacrifice the life and values of popular culture for higher values and a life of service to the community. Similarly, in The Promise, Rania chooses to return to the desert caves and to the life of the Sandwriter, the priestess of the desert. Rania must sacrifice all material possessions (including her hair) as well as her freedom. By turning their backs on the material and familial values of their cultures, Rania and Daughter-of-She-Who-Came-After embody the spiritual values of their culture. They are the priestesses, or the nuns, who find ultimate fulfillment of self in obeying a higher spiritual calling.

This obvious praise of a monastic life points to a significant tension in Hughes's world view. While she clearly rejects coercion by and tradition in secular social structures, she accepts and even lauds coercion by and tradition in spiritual systems. This tension suggests that Hughes's world view is not as broad as her anti-ethnocentric and anti-egocentric themes imply.

4. Other novels emphasize the dangers of pollution as well. In The Crystal Drop, for instance, nature is wounded by the polluting by-products of fossil fuels--the ozone hole grows to dangerous proportions--and humans suffer increased ultra-violet exposure because of it. Similarly, in Ring-Rise, Ring-Set, humans suffer when nature is polluted: the Techs spray black yeast over the snow to encourage melting, poisoning the caribou and threatening

the lives of the Ekoes.

5. J.R. Wytenbroek, in "The Debate Continues: Technology or Nature--A Study of Monica Hughes's Science Fiction Novels," briefly discusses Hughes's criticism of the abusers of technology, and her affirmation of technology used wisely.

6. Similarly, in Ring-Rise, Ring-Set, the Techs' obsession with efficiency suppresses the individuality of the Dome citizens. Liza Monroe must leave the City in order to find self-fulfillment.

7. Jones, in "Technological Pastoralist" notes that the Lords "must look down to the ground instead of up to the stars" (16). He points out the symbolism of the Lords' stoop: their rationality weighs them down and does not allow them to see the spiritual values that the indigenous people find in nature.

8. Kleina David, the Hutterite preacher, condemns the city and calls it "Babylon," comparing it to the ancient city of Babylon that, according to the Old Testament, was destroyed for its pride and wickedness (The Book of Daniel). The animal-like state of the city-dwellers furthers the metaphor. Nebuchadnezzar, the King of Babylon, was punished for his pride, and was reduced to an animal-like state for seven years: "He was driven away from the people and ate grass like cattle. His body was drenched with the dew of heaven until his hair grew like the feathers of an eagle and his nails like the claws of a bird" (Daniel 4: 33 NIV).

9. In addition, the mutants' actions are literally what the war and hostility that presumably led to the nuclear disaster suggest metaphorically: the mutants are eating other humans. By graphically illustrating the metaphors, Hughes emphasizes the horrors of war and criticizes those who engage in it.

10. The same theme appears in Hughes's first fantasy novel, Sandwriter: Eskoril seeks the knowledge that will lead him to *methli*, a substance whose exploitation can make him wealthy. His obsessive search, however, prevents him from entering into true community with others, and also prevents Antia, a princess who agrees to spy for him, from enjoying the true community that the desert people offer her.

11. The "host of ill-understood effects" of scientific knowledge used prematurely frequently appears in Hughes's novels. In Crisis on Conshelf Ten, for instance, the Gillmen are surgically altered to survive under water without diving gear. But the unexpected psychological

effects of their surgical changes cause them to cringe and hide behind rocks in fear when they see the shadows of large fish. In The Tomorrow City, a computer is installed to administrate the city with no thought to "ill-understood effects" of the relentlessly linear computer logic. Consequently, the computer creates a dystopia, eliminating all useless people (the elderly, the street people), and, through various means of mind control, forcing the citizens to obey its commands absolutely.

12. Chapter One discusses this idea further.

13. Hughes's criticism of these social values essentially amounts to a criticism of capitalism as it is currently practiced.

14. The Hutterite rejection of their own history reflects Hughes's faulty research. See Note 1.

15. In Devil on My Back, the ex-slaves are unable to make their own tools and depend on the Arc for survival. The Ekoes in Ring-Rise, Ring-Set are threatened by the ring around the planet; they depend on Tech technology to rescue them.

16. Chapter One shows that, in Hughes's highly technological societies, holistic relationships between humans and nature are possible.

17. Chapter One shows how Hughes's ideal relationship between humans and nature relies on a small human population in a vast expanse of nature. If the human population grows beyond a certain size, nature will have to be exploited in order to provide adequate sustenance for the human inhabitants.

18. Most, if not all, of Hughes's novels describe the protagonists' symbolic journeys into knowledge, particularly knowledge of self. Stott and Jones, in Canadian Books for Children, note that "The treatment of knowledge is at its most complex and extensive in the *Isis* trilogy" (82). Jones's article, "'True Myth'": Female Archetypes in Monica Hughes's The Keeper of the Isis Light'" is especially helpful in explicating Olwen's growth of maturity and self-knowledge.

19. Like the protagonists in the novels discussed in Chapter One, these protagonists can only be symbolically reborn when they are outside of the urban centres, and are in nature.

20. This theme of the dangers of ethnocentrism appears in many of Hughes's novels (e.g. Crisis on Conshelf Ten, Ring-Rise, Ring-Set, Devil on My Back, Sandwriter).

Adrienne E. Kertzer's article, "Setting, Self, and the Feminine Other in Monica Hughes's Adolescent Fiction," discusses ethnocentrism and the fear of "Other" at greater length.

21. For more on herbal medicine in Hughes's novels see Chapter Two, Note 6.

22. Cooperation and genuine community, obviously, demand the compassion towards others that the Techs, in *Ring-Rise, Ring-Set*, and the Lords, in *Devil on My Back*, lack.

23. Utilitarianism is a theme that appears again and again, in different forms, throughout Hughes's novels. Liza, in *Ring-Rise, Ring-Set*, escapes the City in the Hill in order to do "something really useful" (10). Jody, in *Guardian of Isis*, mentally invents all kinds of practical tools that would ease the lives of the Isis colonists, but is forbidden to build them. Tomi, in *Devil on My Back*, learns that his mental encyclopaedia, though full of facts, has little useful knowledge. The Peigan teens' religion, in *The Crystal Drop*, is implicitly criticized because, though it is full of spiritual respect for nature, it requires no useful action. Hughes's conservationism, as discussed in Chapter Two, is largely motivated by utilitarianism.

24. The reader is left with the question of where Rich gets access to herbs "such as feverfew and garlic, healall and parsley" (108) since the group's credits are only good at Government foodstores, and the group is not allowed out of their DA to find the herbs growing naturally.

Some Conclusions

The study of someone's environmental perspective is enormously complex, for it inevitably involves the study of that person's world view, of the role humans play in the balances of nature, and how humans' relationships with each other affect that role. This is certainly the case in Monica Hughes's novels; study of her environmental themes requires study of her perspectives on society, phenomenology, moral imperatives, and a host of other aspects of her world view. While this study of Hughes's environmental perspective (and her world view) is by no means exhaustive, it does discuss some of her main ecological themes. In doing so, I believe that it raises several significant points.

The seven novels discussed here suggest that Hughes values, above all, three things: community, individual self-fulfillment, and nature. These three things are always closely intertwined and are at the centre of every issue and of every plot in the novels. Her environmental ideal, the point around which her environmentalism revolves, postulates a relationship between humans and nature that enhances each of these things. Because of human effort, nature is protected, restored, or nurtured; because of their relationship with nature, humans enjoy genuine community and individual self-fulfillment. The relationship, then, is holistic. Both humans and nature are better because of their relationship with the other party; the whole is greater than the sum of its parts. In addition, the relationship between humans and nature is an active relationship: humans participate in nature's community of life, using resources as they need them. The novels demonstrate the need to pursue and maintain this relationship for both utilitarian and moral reasons. Hughes's environmental ideal works beautifully in her novels; the protagonists' self-development closely intertwines with their growing relationship with and responsibility to nature, as well as with their understanding of true community. But the practical value of Hughes's ideal is limited. Since it can be achieved successfully only in sparsely populated areas, it is not a pragmatic solution for current ecological problems on a heavily populated planet Earth.

A well-written novel, however, always has value beyond its utilitarian value. Perhaps some of the greatest value in Hughes's novels lies in her poignant social criticism. The subjects of her criticism are wide and varied--nuclear warfare, limiting (and limited) mainstream Western medicine, current North American farming practices, those who see luxury as a necessity and even a right, exploiters of other people and countries--the list goes on and on. While her criticism often echoes that of various lobbyist and public awareness groups, it also inevitably revolves around her own, unique environmentalism: each subject of

Hughes's criticism somehow suppresses the development of an ideal relationship between humans and nature. This suppression may occur through damage to nature or humans, through polarization of humans from nature, through the suppression of individual self-fulfillment, or through the suppression of genuine community between humans; since self-fulfillment, community, and nature are so closely intertwined in Hughes's novels, the suppression of one inevitably affects the others.

Much of our Western, institutionalized, consumer-oriented way of life comes under Hughes's social criticism, which often produces an anti-institutionalist undercurrent. This undercurrent is most obvious in the novels' protagonists, who frequently demonstrate their maturity by undermining social institutions in order to promote individuality, true community, and harmony with nature. The undercurrent is also clear in the profoundly negative, often dystopic portrayal of highly institutionalized societies. Mark Sagoff, in his introduction of The Economy of the Earth (1988), notes that social regulation, since it reflects public values, expresses what a society believes and what its members stand for as a society. In other words, the institutions that regulate a society define the essence of that society. Hughes's anti-institutional undercurrent, then, rejects some foundations of Western society, particularly those foundations that contradict her environmental agenda.

Accompanying Hughes's social criticism, however, is a deep-seated optimism that colours her social criticism. Her novels, for instance, repeatedly demonstrate enormous faith in the recuperative powers of nature, even when nature has been badly damaged; it is never too late for the development of harmony between humans and nature. Her optimism is further evident in her equally enormous faith in the essential goodness of human nature. Even the most dystopic society in Hughes's novels is never beyond hope; positive social change is always possible. Furthermore, one person--one young, adolescent person at that--can bring about substantial positive social change. Hughes's emphasis on the importance of individual self-fulfillment, then, reflects her optimism. Self-fulfillment is highly valued because a single, self-actualized person, in Hughes's novels, has the potential to change positively an entire society.

Another important element of Hughes's writing is her unique narrative techniques: Hughes often uses traditional narrative structures, but she uses them in non-traditional ways. Traditionally, for example, a protagonist embarks on a circular journey to mature and returns home ready to accept the adequacy of that home and her or his role in it. In Hughes's novels, however, the protagonist usually embarks on a circular journey to mature but then subsequently demonstrates the attainment of that maturity by changing and improving his or her home, rather than by accepting it as it is. (Improving a society in Hughes's novels inevitably means bringing it closer to an ideal relationship with nature.) The implications of this non-traditional interpretation of the circular journey are far-reaching. Perry Nodelman points out that the circular journey as it often appears in children's science fiction shows a clear prejudice against scientific knowledge and technology. In addition, the circular journey often "reveals a surprising attack on self-reliance" in children's science fiction novels ("Out There" 291). While Hughes's protagonists often follow the same path as the protagonists in the novels of which Nodelman speaks, their journeys do not reveal a prejudice against scientific knowledge or technology. Instead, scientific knowledge and technology are crucial to the development of an ideal relationship between humans and nature. Further, the circular journeys in Hughes's novels never reveal surprising attacks on self-reliance. On the contrary, the protagonists, upon completion of their journeys, must change an entire society, an undertaking that requires a great deal of self-reliance.

Hughes's circular journeys also closely mimic the central action of journeys in children's pastoral literature. Indeed, Hughes shares many of the environmental concerns and ideals that are central to pastoral literature. But again, her use of the pattern is not a traditional one. Stott, in "Jean George's Arctic

Pastoral," notes that the dominant tone in pastoral literature is an elegiac one, a lament for a passing way of life (138). But Hughes uses the circular journey to insist that pastoralism need not be a thing of the past. The protagonists' circular journeys are not elegies to a peaceful, pastoral way of life, but are manifestos to bring back, to recreate a peaceful, pastoral way of life.

In 1934, Gaston Bachelard predicted that "Sooner or later scientific thought will become the central subject of philosophical controversy" (New Scientific 2). Monica Hughes's novels, like many other science fiction novels, fulfill that prediction, for they are philosophical explorations of scientific thought. More specifically, however, Hughes's novels explore the ecological sciences--geography, agriculture, biology, chemistry, geology, horticulture, and other fields. Her novels conclude that ecology, the science of how humans relate to their environment, is central to the well-being of nature. In addition, however, ecology is central to individual and social development in humans. Consequently, the novels of Monica Hughes insist that humans have a profound moral obligation to nature.

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